Mathematics

Year 8
Above satisfactory

WORK SAMPLE PORTFOLIO

Annotated work sample portfolios are provided to support implementation of the Foundation – Year 10 Australian Curriculum.

Each portfolio is an example of evidence of student learning in relation to the achievement standard. Three portfolios are available for each achievement standard, illustrating satisfactory, above satisfactory and below satisfactory student achievement. The set of portfolios assists teachers to make on-balance judgements about the quality of their students' achievement.

Each portfolio comprises a collection of students' work drawn from a range of assessment tasks. There is no pre-determined number of student work samples in a portfolio, nor are they sequenced in any particular order. Each work sample in the portfolio may vary in terms of how much student time was involved in undertaking the task or the degree of support provided by the teacher. The portfolios comprise authentic samples of student work and may contain errors such as spelling mistakes and other inaccuracies. Opinions expressed in student work are those of the student.

The portfolios have been selected, annotated and reviewed by classroom teachers and other curriculum experts. The portfolios will be reviewed over time.

ACARA acknowledges the contribution of Australian teachers in the development of these work sample portfolios.

THIS PORTFOLIO: YEAR 8 MATHEMATICS

This portfolio provides the following student work samples:

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This portfolio of student work shows the solving of everyday problems involving rates, ratios and percentages (WS1, WS2, WS6, WS16), including those involving profit and loss (WS16). The student uses efficient mental and written strategies to carry out the four operations with integers (WS15) and describes rational numbers (WS7). The student explains issues related to the collection of data and the effect of outliers on means and medians in that data (WS3). The student solves linear equations (WS8) and graphs linear relationships on the Cartesian plane (WS4). The student deduces the properties of quadrilaterals (WS5), names the features of circles and calculates the areas and perimeters of plane shapes including circles (WS10, WS12, WS14). The student solves problems relating to the volume of prisms (WS11). The student investigates the conditions for congruence and applies these conditions to triangles (WS13). The student models authentic situations with two-way tables and Venn diagrams (WS9).

Mathematics

Year 8
Above satisfactory

Number and measurement: Food pyramids

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They recognise index laws and apply them to whole numbers. They describe rational and irrational numbers. Students solve problems involving profit and loss. They make connections between expanding and factorising algebraic expressions. Students solve problems relating to the volume of prisms. They make sense of time duration in real applications. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students model authentic situations with two-way tables and Venn diagrams. They choose appropriate language to describe events and experiments. They explain issues related to the collection of data and the effect of outliers on means and medians in that data.*
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> *Students use efficient mental and written strategies to carry out the four operations with integers. They simplify a variety of algebraic expressions. They solve linear equations and graph linear relationships on the Cartesian plane. Students convert between units of measurement for area and volume. They perform calculations to determine perimeter and area of parallelograms, rhombuses and kites. They name the features of circles and calculate the areas and circumferences of circles. Students determine complementary events and calculate the sum of probabilities.*

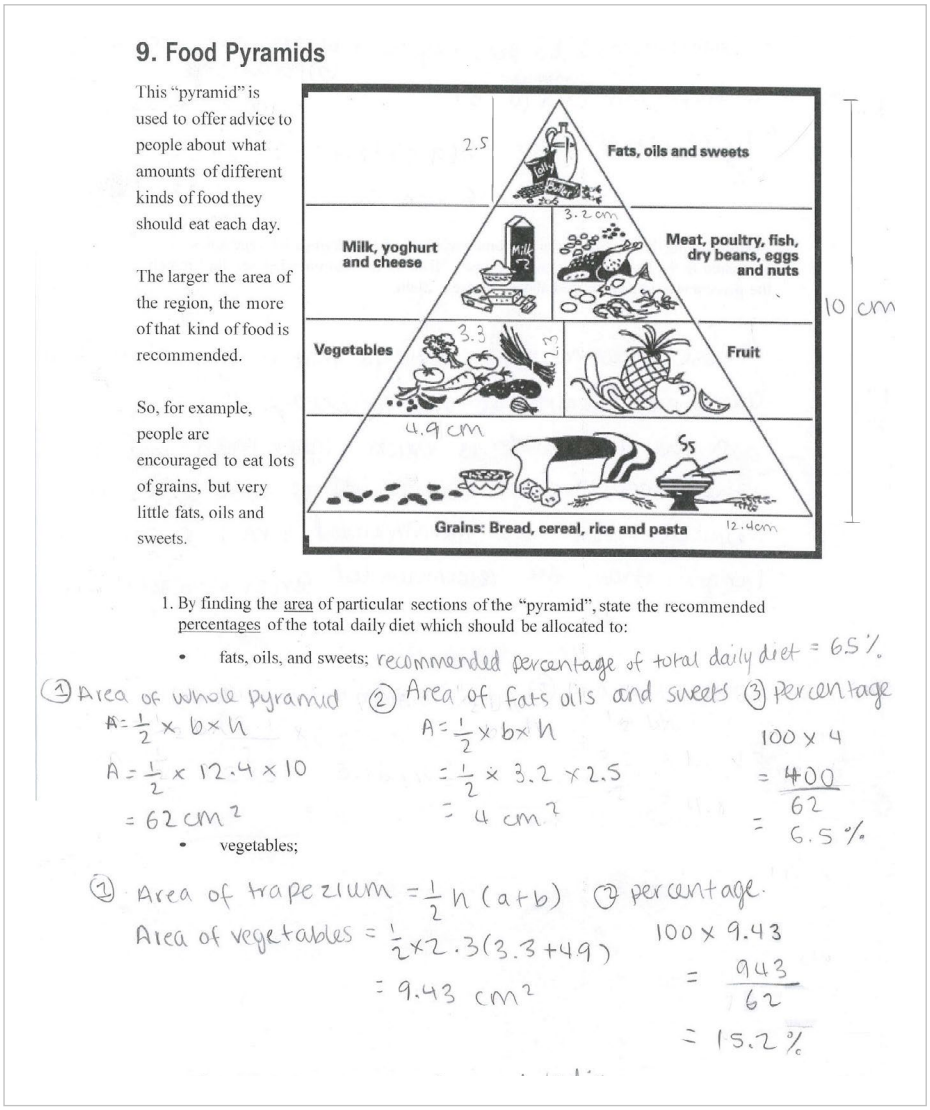
Summary of task

Students were given this task to consolidate previously studied units on rates, ratios and percentages.

Mathematics

Year 8
Above satisfactory

Number and measurement: Food pyramids



9. Food Pyramids

This "pyramid" is used to offer advice to people about what amounts of different kinds of food they should eat each day.

The larger the area of the region, the more of that kind of food is recommended.

So, for example, people are encouraged to eat lots of grains, but very little fats, oils and sweets.

1. By finding the area of particular sections of the "pyramid", state the recommended percentages of the total daily diet which should be allocated to:

- fats, oils, and sweets; recommended percentage of total daily diet = 6.5%

① Area of whole pyramid
$A = \frac{1}{2} \times b \times h$
$A = \frac{1}{2} \times 12.4 \times 10$
$= 62 \text{ cm}^2$

② Area of fats oils and sweets
$A = \frac{1}{2} \times b \times h$
$= \frac{1}{2} \times 3.2 \times 2.5$
$= 4 \text{ cm}^2$

③ percentage
100×4
$= \frac{400}{62}$
$= 6.5\%$

- vegetables;

① Area of trapezium $= \frac{1}{2} h (a+b)$
Area of vegetables $= \frac{1}{2} \times 2.3 (3.3 + 4.9)$
$= 9.43 \text{ cm}^2$

② percentage.
100×9.43
$= \frac{943}{62}$
$= 15.2\%$

Food Pyramids used by kind permission of NSW Department of Education and Communities.
Note: For the purpose of the work sample portfolio, the image has been reduced in size.

Annotations

Measures and records only the lengths required to facilitate calculation of necessary areas.

Shows each step in the solution process.

Demonstrates fluency by selecting and applying the appropriate area formulas to calculate the areas of the necessary sections.

Demonstrates fluency with percentage calculations.

Uses appropriate units for area.

Interprets the calculated answer in the context of the problem.

Number: Feed the family

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students were given a task to complete in class time relating to the unit of work they had completed on ratios and scales.

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Above satisfactory

Number: Feed the family

FEED THE FAMILY ON FATHERS DAY

Remember:
1kg = 1000g

The whole family are coming to your house for Father's Day and you have to cook pancakes for everyone!

This is the recipe to make enough pancakes for **4** people

Ingredients
Plain Flour – 200g
Self Raising Flour – 300g
Milk – 200g (200mL)
Egg – 1

1. Write down the ***simplified*** ratio of

Plain Flour : Self Raising Flour	Milk : Dry ingredients
200 : 300 2 : 3	2 : 5

2. If this feeds a family of 4, **show** how you would calculate what quantities you would need for **20 people** . Put your answers in the table below

(WORKING SPACE)

200x5
200x5 & 300x5 & 1x5

Number of people	Flour	SR Flour	Milk	Eggs
20	1000g (1kg)	1'500g (1.5kg)	1000g (1kg)	5 Eggs

Annotations

Simplifies ratios using given quantities in both a simple and more complex question.

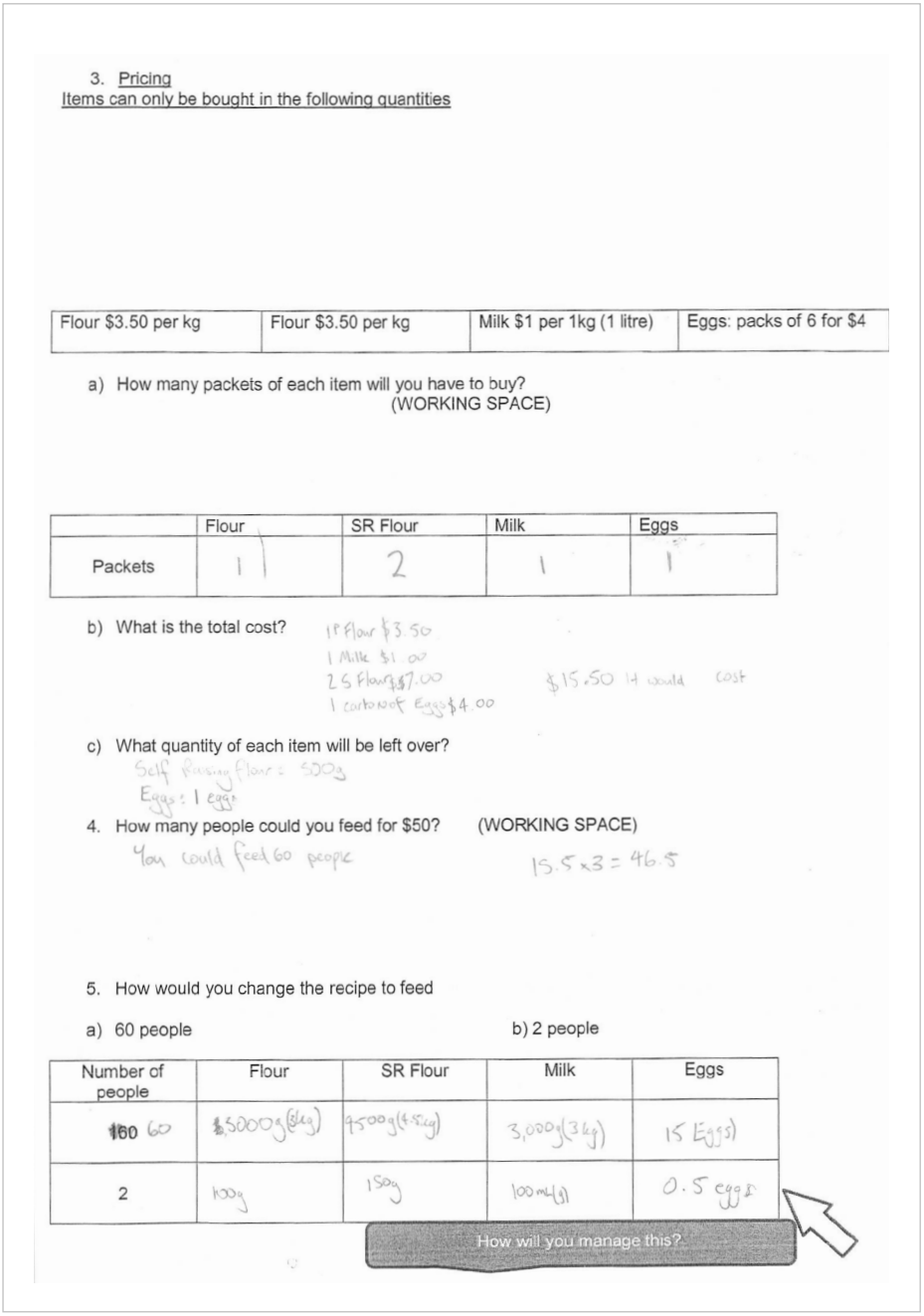
Identifies that the original recipe needs to be scaled by a factor of 5.

Puts correct answers in table and converts to larger units of measure.

Mathematics

Year 8
Above satisfactory

Number: Feed the family



3. Pricing
Items can only be bought in the following quantities

Flour $3.50 per kg	Flour $3.50 per kg	Milk $1 per 1kg (1 litre)	Eggs: packs of 6 for $4

a) How many packets of each item will you have to buy?
(WORKING SPACE)

	Flour	SR Flour	Milk	Eggs
Packets	1	2	1	1

b) What is the total cost?
1 Flour $3.50
1 Milk $1.00
2 S Flour $7.00
1 carton of Eggs $4.00
$15.50 It would cost

c) What quantity of each item will be left over?
Self Raising Flour: 500g
Eggs: 1 egg

4. How many people could you feed for $50? (WORKING SPACE)
You could feed 60 people
15.5 x 3 = 46.5

5. How would you change the recipe to feed

a) 60 people b) 2 people

Number of people	Flour	SR Flour	Milk	Eggs
~~160~~ 60	5000g(5kg)	7500g(7.5kg)	3,000g(3kg)	15 Eggs
2	100g	150g	100ml(g)	0.5 eggs

How will you manage this?

Annotations

Calculates number of packets of each ingredient and cost based on answer to question 2 showing some working.

Uses calculated cost to feed 20 people to reasonably estimate number of people who could be fed with $50.

Simplifies and applies ratios to scale quantities up and down.

Statistics: Books, cricket and pets

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students were given a task to complete in class time relating to the unit of work they had completed on statistical analysis of data and the effects of outliers on the interpretation of data.

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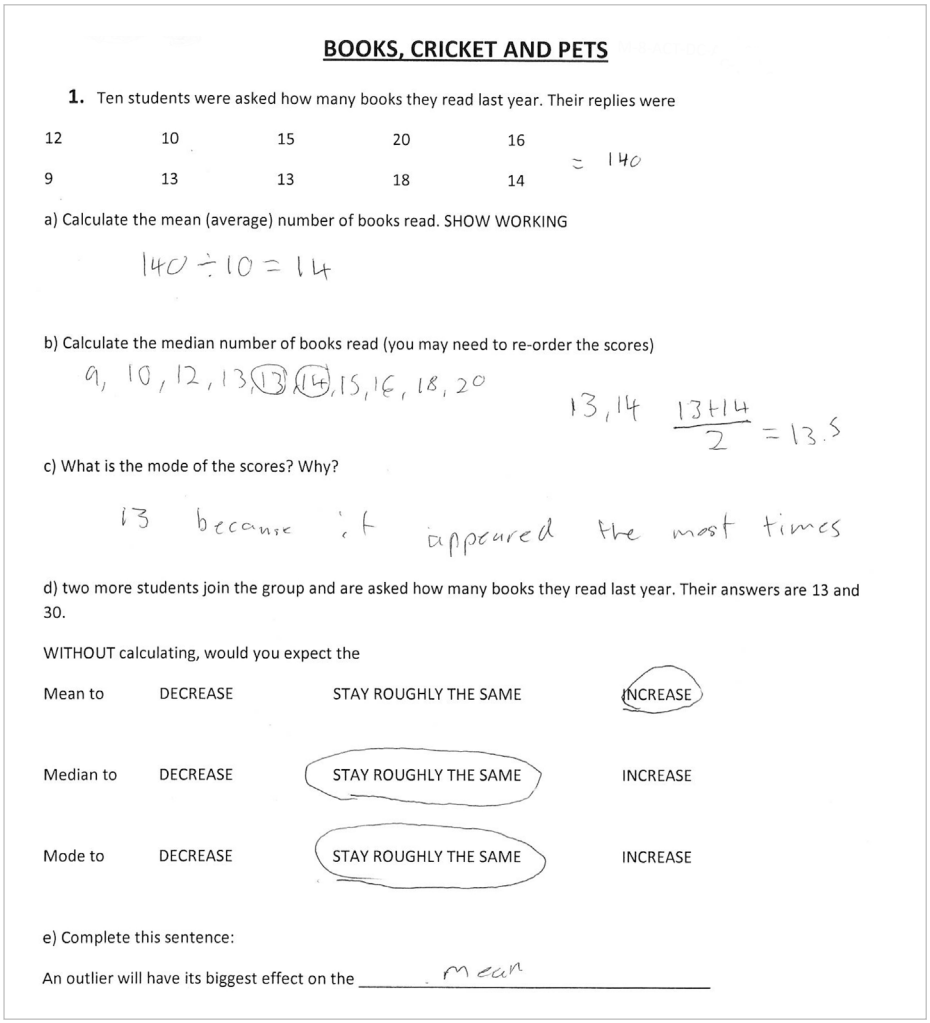
Above satisfactory

Statistics: Books, cricket and pets



BOOKS, CRICKET AND PETS

1. Ten students were asked how many books they read last year. Their replies were

12	10	15	20	16
9	13	13	18	14

= 140

a) Calculate the mean (average) number of books read. SHOW WORKING

140 ÷ 10 = 14

b) Calculate the median number of books read (you may need to re-order the scores)

9, 10, 12, 13, 13, 14, 15, 16, 18, 20

13, 14 $\frac{13+14}{2} = 13.5$

c) What is the mode of the scores? Why?

13 because it appeared the most times

d) two more students join the group and are asked how many books they read last year. Their answers are 13 and 30.

WITHOUT calculating, would you expect the

Mean to	DECREASE	STAY ROUGHLY THE SAME	INCREASE
Median to	DECREASE	STAY ROUGHLY THE SAME	INCREASE
Mode to	DECREASE	STAY ROUGHLY THE SAME	INCREASE

e) Complete this sentence:

An outlier will have its biggest effect on the mean

Annotations

Calculates mean, median and mode from a list of discrete data.

Recognises that the outlier would increase the mean but have little effect on the median and mode.

Statistics: Books, cricket and pets

2. In a cricket match, Australia scored a total of 347 runs. There were 11 batters.

a) What was the mean number of runs per player?

31.5 per batter $347 \div 11 = 31.5$

b) Do you know how many runs each batter scored? Why/Why not?

because it doesnt show with batter got how much

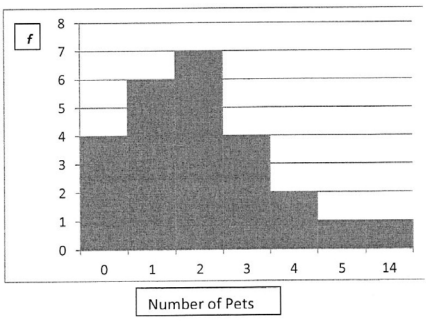
c) If you are told that the **median score was 36**, write down a possible score for each player in the table below.

Batter 1	Batter 2	Batter 3	Batter 4	Batter 5	Batter 6	Batter 7	Batter 8	Batter 9	Batter10	Batter11
6	12	24	18	30	36	42	48	54	38	39

3. A survey was taken in a year 8 class asking each student how many pets they had at home.
A frequency distribution histogram was drawn of the results.

a) Fill out the frequency distribution table

x	f	fx
0	4	0
1	6	6
2	7	14
3	4	12
4	2	8
5	1	5
14	1	14
	Σf 25	Σfx 59



How many students were surveyed?	How many pets were there all together?
25	59
What is the mean number of pets?	**What is the effect of the outlier?**
2.36	pets - 45 people - 24 mean - 1.875

WHO MIGHT BE THIS INFORMATION BE USEFUL FOR?

Annotations

Calculates the mean showing working.

Demonstrates understanding that the sum of the data values does not provide information about individual data values.

Creates an appropriate data set with the correct median, number of values and sum.

Interprets data presented in a graph to find the number of students surveyed and the total number of pets and calculates the mean using these numbers.

Recognises 14 as the outlier and calculates the decrease in the number of pets and the mean without the outlier included.

Algebra: Linear relationships in the real world

Year 8 Mathematics achievement standard

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Summary of task

Students were asked to research the peak rates for taxi hire in the ACT and NSW. The rates at the time are shown in the table below.

	ACT	NSW
Flag fall	$4.70	$3.50
Price/km	$1.90	$2.14

Students were asked to use their knowledge of graphing and equations to make comparisons between the two sets of information and to use mathematical reasoning to draw conclusions from the investigation.

Algebra: Linear relationships in the real world

Comparing rates

1. Fill in the following tables to compare the Peak rates of NSW and ACT

ACT

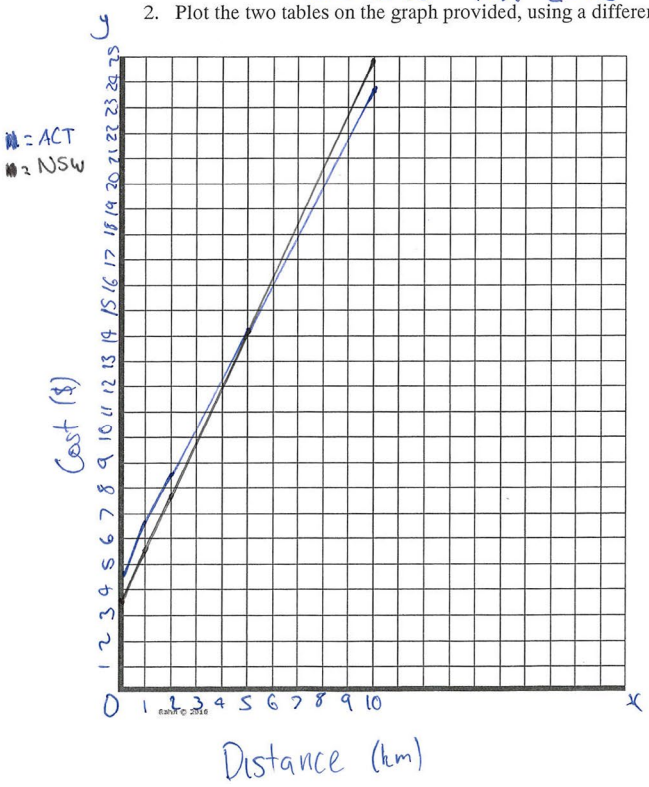
Flag rate	Flag + 1km	Flag + 2km	Flag + 5km	Flag + *10*km
$4.70	$6.60	$8.50	$14.20	$23.70

NSW

Flag rate	Flag + 1km	Flag + 2km	Flag + 5km	Flag + *10* km
$3.50	$5.64	$7.78	$14.20	$24.90

Peak rates Taxi Costs

2. Plot the two tables on the graph provided, using a different colour for each.



Annotations

Graphs linear relationships, labelling the axes and giving units, a key and a title.

Algebra: Linear relationships in the real world

3. Write an Algebraic equation to suit the ACT Taxi rates.
(Hint: flag rate + price per km = Cost of ride)

$4.20 + $1.90x = C C = cost x = km

4. Write an Algebraic equation to suit the NSW Taxi rates

$3.50 + $2.19x = C

5. Explain how your equations work, in words:

The equation works by adding the flag rate to the price per kilometer. times the price per km by the amount of km.

6. At which distance does NSW become more expensive than ACT taxis and why?

At the 5km mark because the NSW price per km is larger but flag rate is smaller. Eventually the NSW taxi price will be higher than the ACT's

7. If you had $20, how far could you travel in a taxi in the ACT?

20 = $4.2 + $1.9x
15.3 = $1.9x
8.05 = x

Annotations

Defines variables and derives correct linear equations from the information given.

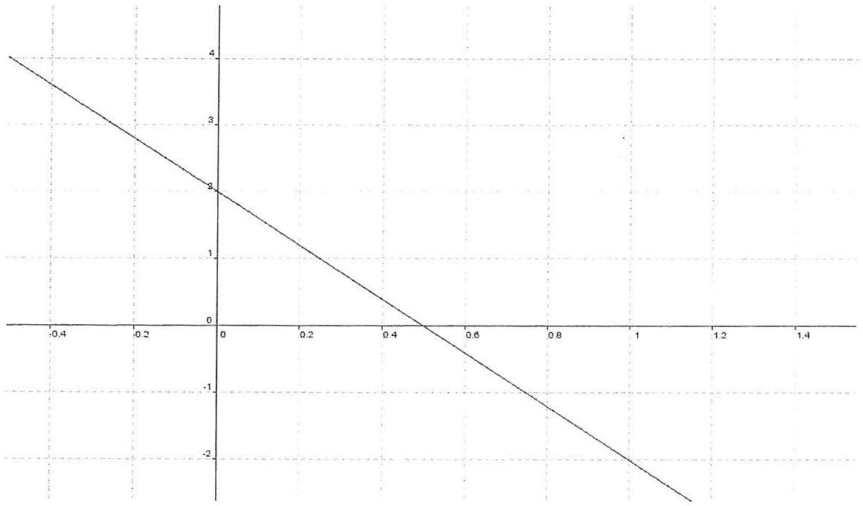
Links the equation created with the real-life problem and explains why the equation works to model the situation.

Compares the graphs of two linear relationships, demonstrating understanding of the meaning of their point of intersection.

Understands the variables used in the equation and solves the equation for a given situation.

Algebra: Linear relationships in the real world

8. Explain why this graph could not represent the rate of a taxi?



This couldn't respect the cost of the taxi because the price decreases so you wouldn't have to pay money.

Annotations

Explains why the graph is a not valid representation and relates it to the context.

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Geometry: Sorting quadrilaterals

Year 8 Mathematics achievement standard

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Summary of task

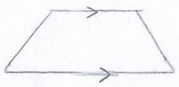
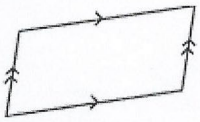
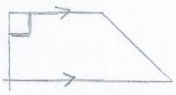
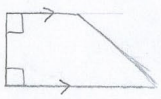
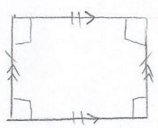
Students were given a task to complete in class time relating to the unit of work they had completed on quadrilaterals. They were required to show their reasoning when drawing conclusions.

Geometry: Sorting quadrilaterals

19. Sorting Quadrilaterals

In the table below, sketch a quadrilateral with the properties indicated by each box in the table. Label all right angles and sides that are parallel.
If it is impossible to fill a particular box in the table, write "impossible" and a brief justification for this.
(Two cells in the table have already been completed for you.)
If a particular case is possible, write in the most specific name you can for the quadrilateral you have drawn underneath your drawing (e.g, rectangle, trapezium, etc.)

Number of pairs of parallel sides (exactly)

Number of right angles (exactly)	0	1	2
0	 Kite	 trapezium	 *Parallelogram*
1	Because if you had a set of Parallel sides you can't have only 1 right angle impossible	 right trapezium	Because if you have 2 sets of Parallel pairs you have to have more than 1 right angle. impossible
2	For there to be more than 1 right angle you have to have a set of Parallel sides. impossible	 right trapezium	Because there is no quadrilateral that has 2 right angles and 2 sets of Parallel sides. impossible
3	Because You can't have 3 right angles. It would have to have 4 right angles. impossible	Because You can't have 3 right angles. impossible	Because You can't have 3 right angles. impossible
4	*If a quadrilateral has 4 right angles, it must be a square or a rectangle, and that can't have 0 parallel sides.* *Impossible*	Because if it has 4 right angles it has to be a square or rectangle, and that can't have 1 Parallel side. Impossible	 Square

Annotations

Demonstrates an understanding of the features of quadrilaterals.

Demonstrates geometric reasoning when combining the constraints of the number of right angles and parallel sides in the construction of quadrilaterals.

Mathematics

Year 8
Above satisfactory

Number: Ratios

Year 8 Mathematics achievement standard

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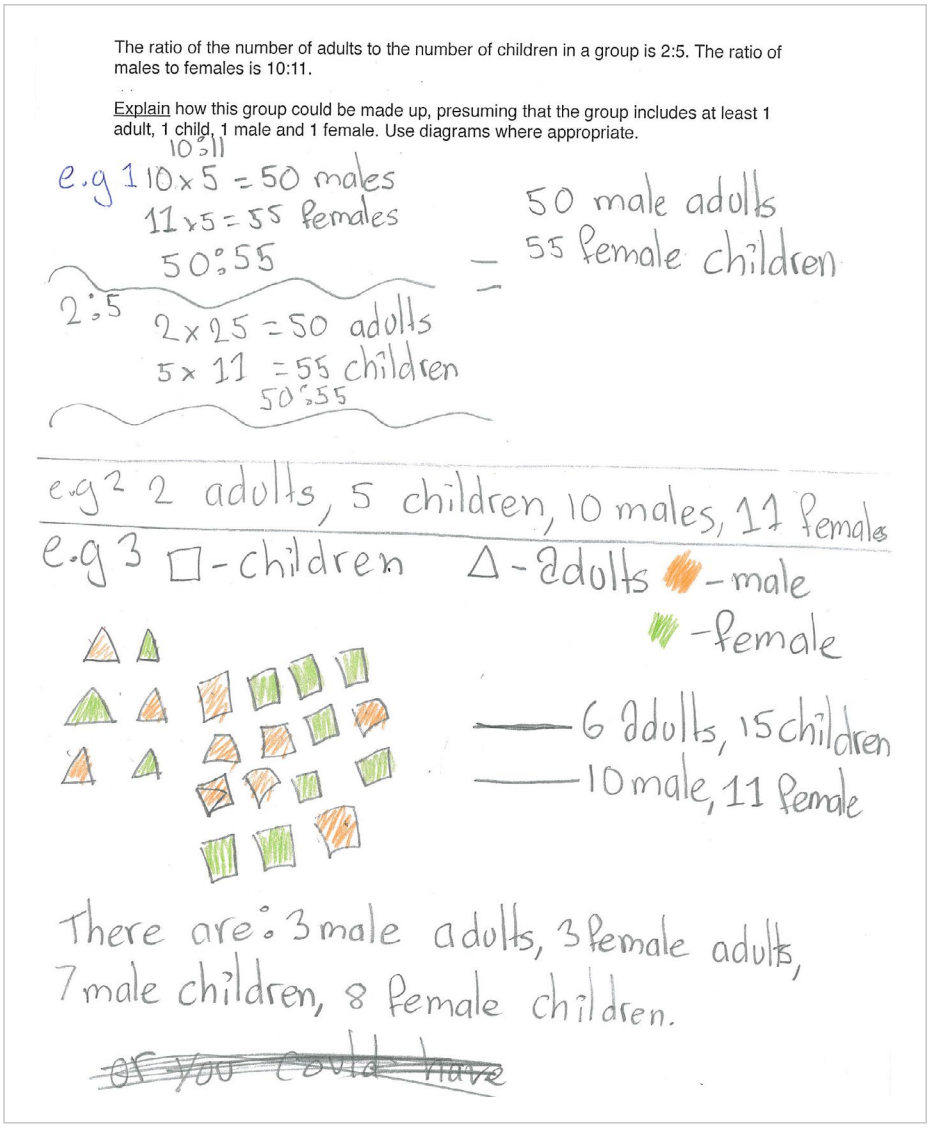
Summary of task

Students were given a task to complete in class time relating to the unit of work they had completed on reasoning using problem-solving strategies.

Mathematics

Year 8
Above satisfactory

Number: Ratios



The ratio of the number of adults to the number of children in a group is 2:5. The ratio of males to females is 10:11.

Explain how this group could be made up, presuming that the group includes at least 1 adult, 1 child, 1 male and 1 female. Use diagrams where appropriate.

10:11
e.g 1 10 x 5 = 50 males
11 x 5 = 55 females
50:55
=
50 male adults
55 female children
2:5
2 x 25 = 50 adults
5 x 11 = 55 children
50:55

e.g 2 2 adults, 5 children, 10 males, 11 female

e.g 3 □ - children △ - adults - male - female

6 adults, 15 children
10 male, 11 female

There are: 3 male adults, 3 female adults, 7 male children, 8 female children.

~~or you could have~~

Annotations

Explores both ratios to find an example that satisfies both of them.

Multiplies one ratio by a factor of three to generate a solution.

Synthesises the requirements of both ratios to analyse the composition of the group.

Mathematics

Year 8
Above satisfactory

Number: Halfway

Year 8 Mathematics achievement standard

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Summary of task

Students were given a task to complete in class time relating to the unit of work they had completed on rational numbers. The task required students to demonstrate their reasoning and problem-solving skills to answer the questions.

Mathematics

Year 8
Above satisfactory

Number: Halfway

A teacher asks "what number is half way between 4 and 6 on the number line?"

Kurt answers "5".

"Yes" says the teacher."So what number is half way between $\frac{1}{4}$ and $\frac{1}{6}$?"

" $\frac{1}{5}$ answers Chantelle.

"Think again "says the teacher!

Why was Kurt correct and Chantelle wrong? Explain your answer fully, using your understanding of fractions. What should Chantelle's answer have been? Show this on a number line.

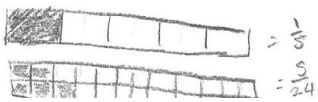
You can change $\frac{1}{4}$ to $\frac{6}{24}$ and $\frac{1}{6}$ to $\frac{4}{24}$

the answer would be $\frac{5}{24}$, because that is half way between $\frac{4}{24}$ and $\frac{6}{24}$.

You have to change the denominator.

At first I tried the denominator as 12, but it just ended up as $\frac{2}{12}$ and $\frac{3}{12}$. So then I tried 24, and it worked.

Chantelle is wrong because they are not the same.



Annotations

Represents rational numbers on a number line on which the line segments are equally spaced.

Compares the two rational numbers using equivalent fractions with the same denominator.

Uses fraction bars of approximately equal length and area to show the relative sizes of the rational numbers being compared..

Algebra: Solving linear equations

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They recognise index laws and apply them to whole numbers. They describe rational and irrational numbers. Students solve problems involving profit and loss. They make connections between expanding and factorising algebraic expressions. Students solve problems relating to the volume of prisms. They make sense of time duration in real applications. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students model authentic situations with two-way tables and Venn diagrams. They choose appropriate language to describe events and experiments. They explain issues related to the collection of data and the effect of outliers on means and medians in that data.*
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> *Students use efficient mental and written strategies to carry out the four operations with integers. They simplify a variety of algebraic expressions. They solve linear equations and graph linear relationships on the Cartesian plane. Students convert between units of measurement for area and volume. They perform calculations to determine perimeter and area of parallelograms, rhombuses and kites. They name the features of circles and calculate the areas and circumferences of circles. Students determine complementary events and calculate the sum of probabilities.*

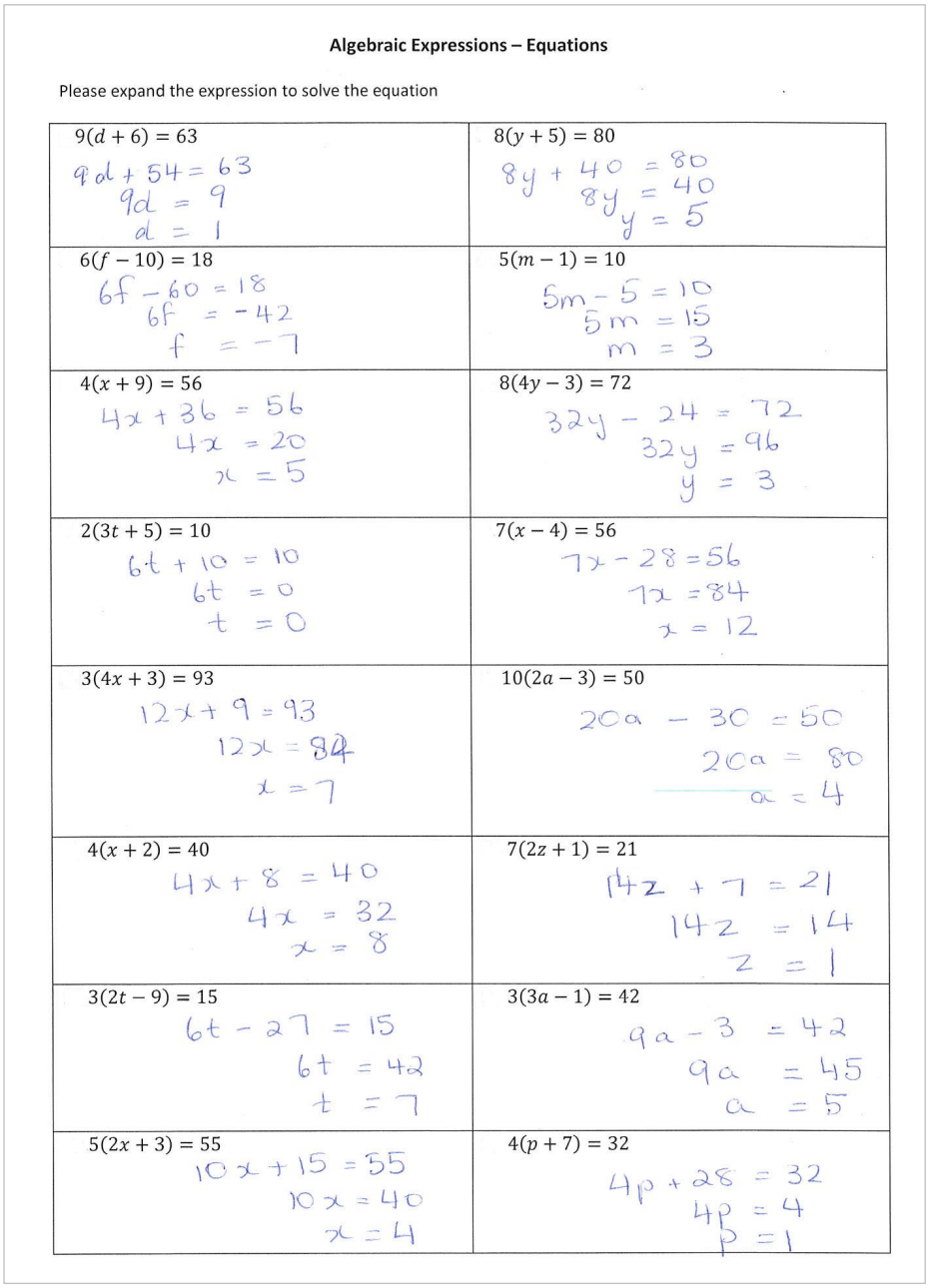
Summary of task

Students were given a task to complete in class time after a unit of work on algebraic expansions and solving equations.

Mathematics

Year 8
Above satisfactory

Algebra: Solving linear equations



Algebraic Expressions – Equations

Please expand the expression to solve the equation

$9(d+6)=63$ $9d+54=63$ $9d=9$ $d=1$	$8(y+5)=80$ $8y+40=80$ $8y=40$ $y=5$
$6(f-10)=18$ $6f-60=18$ $6f=-42$ $f=-7$	$5(m-1)=10$ $5m-5=10$ $5m=15$ $m=3$
$4(x+9)=56$ $4x+36=56$ $4x=20$ $x=5$	$8(4y-3)=72$ $32y-24=72$ $32y=96$ $y=3$
$2(3t+5)=10$ $6t+10=10$ $6t=0$ $t=0$	$7(x-4)=56$ $7x-28=56$ $7x=84$ $x=12$
$3(4x+3)=93$ $12x+9=93$ $12x=84$ $x=7$	$10(2a-3)=50$ $20a-30=50$ $20a=80$ $a=4$
$4(x+2)=40$ $4x+8=40$ $4x=32$ $x=8$	$7(2z+1)=21$ $14z+7=21$ $14z=14$ $z=1$
$3(2t-9)=15$ $6t-27=15$ $6t=42$ $t=7$	$3(3a-1)=42$ $9a-3=42$ $9a=45$ $a=5$
$5(2x+3)=55$ $10x+15=55$ $10x=40$ $x=4$	$4(p+7)=32$ $4p+28=32$ $4p=4$ $p=1$

Annotations

Expands each expression and then solves the equation.

Expands the expression ensuring correct usage of negatives in the expansion and the solution of the equation.

Mathematics

Year 8
Above satisfactory

Probability: Venn diagrams and two-way tables

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They recognise index laws and apply them to whole numbers. They describe rational and irrational numbers. Students solve problems involving profit and loss. They make connections between expanding and factorising algebraic expressions. Students solve problems relating to the volume of prisms. They make sense of time duration in real applications. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students model authentic situations with two-way tables and Venn diagrams. They choose appropriate language to describe events and experiments. They explain issues related to the collection of data and the effect of outliers on means and medians in that data.*
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Summary of task

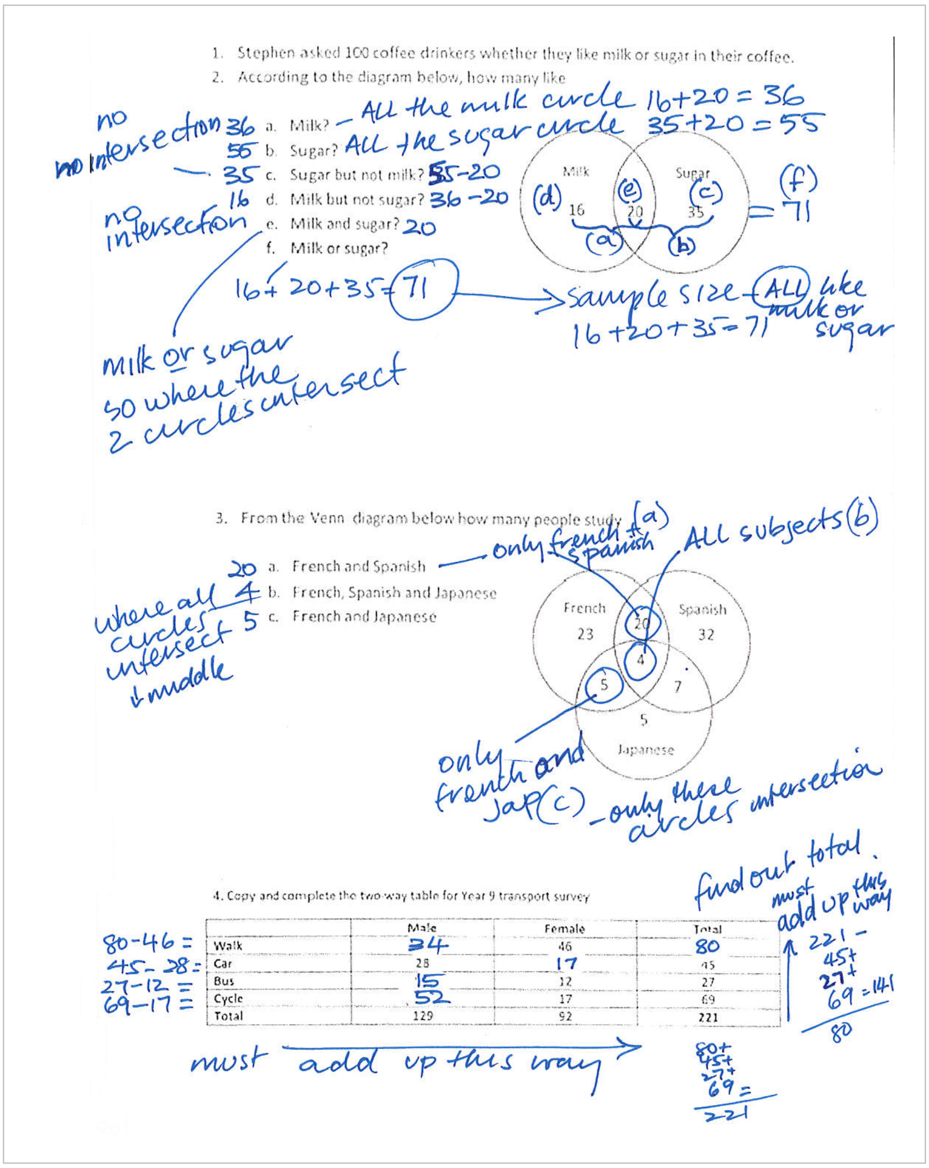
Students had been using Venn diagrams and two-way tables to model information and hence draw conclusions.

Students were required to complete the activity involving Venn diagrams and a two-way table.

Mathematics

Year 8
Above satisfactory

Probability: Venn diagrams and two-way tables



1. Stephen asked 100 coffee drinkers whether they like milk or sugar in their coffee.
2. According to the diagram below, how many like

36 a. Milk? – All the milk circle 16+20 = 36
55 b. Sugar? All the sugar circle 35+20 = 55
35 c. Sugar but not milk? 55–20
16 d. Milk but not sugar? 36 –20
e. Milk and sugar? 20
f. Milk or sugar?

16+ 20+35= 71 → sample size – ALL like milk or sugar 16+20+35= 71

no intersection

milk or sugar so where the 2 circles intersect

3. From the Venn diagram below how many people study

20 a. French and Spanish – only french + spanish (a)
4 b. French, Spanish and Japanese – All subjects (b)
5 c. French and Japanese

where all circles intersect + middle

only french and Jap (c) – only these circles intersection

4. Copy and complete the two-way table for Year 9 transport survey

find out total must add up this way

	Male	Female	Total
Walk	34	46	80
Car	28	17	45
Bus	15	12	27
Cycle	52	17	69
Total	129	92	221

80–46 =
45– 28 =
27–12 =
69–17 =

must add up this way →

221 – 45+ 27+ 69 = 141 / 80

80+ 45+ 27+ 69 = 221

Annotations

Synthesises information in Venn diagram to reason a solution to each question.

Demonstrates understanding of the structure of the two-way table and how the totals of the vertical columns and horizontal rows align.

Measurement: Circumference and area

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students were given a task to complete in class time after a unit of work on circles.

Mathematics

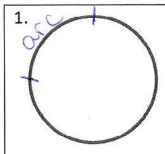
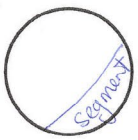
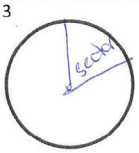
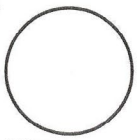
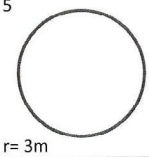
Year 8
Above satisfactory

Measurement: Circumference and area

Circumference and area of circles

a) on one of the circles label:
   I. an arc
   II. a sector
   III. a segment

b) Calculate the circumference and area of each of the given circles

1.  r=2 cm	C= $2 \times \pi \times 2$ $= 4\pi$ $= 12.56\ cm$ A= $= \pi \times 4^2$ $= 16\pi$ $= 50.24\ cm^2$
2  r=1.5 cm	C= $2 \times \pi \times 1.5$ $= 3\pi$ $= 9.42\ cm$ A= $\pi \times 1.5^2$ $= 70.65\ cm^2$
3  r=1.4 m	C= $2 \times \pi \times 1.4$ $= 2.8 \times \pi$ $= 8.792\ cm$ A= $\pi \times 1.4^2$ $= 6.1544\ cm^2$ $= 6.15\ m^2$ (2 dec places)
4  r=3.6mm	C= $2 \times \pi \times 3.6$ $= 22.608\ mm$ A= $\pi \times 3.6^2$ $= 40.6944\ mm^2$ $= 40.70\ mm^2$ (2 dec places)
5  r= 3m	C= $2 \times \pi \times 3$ $= 6\pi$ $= 18.84\ m$ A= $\pi \times 3^2$ $= 28.26\ m^2$

Annotations

Calculates the circumference and area of the circle with correct usage of units. Uses the wrong radius for area but performs a correct calculation.

Identifies and labels the required parts of the circle.

Rounds answers and states the number of decimal places to which they were rounded.

Measurement: Rain on the roof

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students were given a task to complete in class time after a unit of work on volume.

Measurement: Rain on the roof

Rain on My Roof

Typical roof areas:

Home Type	Roof area(m^2)
2 bedroom home	100
3 bedroom home	150
4 bedroom home	200
5 bedroom home	250

Assume the roof is flat. (This makes little difference to the amount of rain collected).

From the table, choose a home.

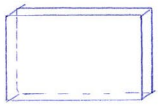
Using your choice of home, calculate the amount of rainwater in litres (L) collected by the roof of your chosen home when one millimetre (1mm) of rain falls.

1mm = 0.001m

$1m^3$ holds = 1000L

My choice of home: 250 m^2 ⇒ 5 bedroom

Calculations:



Roof is a rectangular prism
Volume of rain = $(250 \times 0.001)m^3$
Volume in litres = $(250 \times 0.001 \times 1000)L$
= 250 L

Amount of rainwater collected by the roof when 1mm of rain falls is the same as the area of the roof because multiplying by 1000 cancels out the 0.001

Annotations

Calculates to volume of water on the roof in litres.

Draws a correct conclusion as to why the numerical answer in litres is the same as the numerical answer to the area of the roof.

Number and measurement: Investigating circles

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students had been learning about the concept of irrational numbers, including π, and the relationship between the circumference of a circle and the radius.

The students were asked to investigate the relationship between the circumference and the diameter of a circle by measuring a variety of circular objects. They were given one week to complete the task.

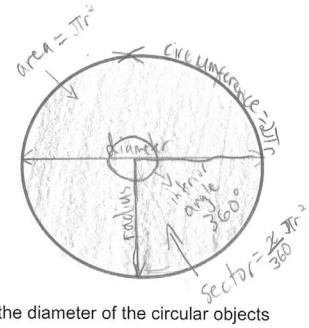
Mathematics

Year 8
Above satisfactory

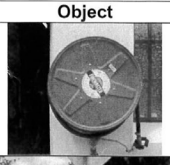
Number and measurement: Investigating circles

Year 8 Task One: Investigating Circles

1. Label the diagram of the circle to the right including all the important features you know.



2. (a) Use an appropriate method to measure the circumference and the diameter of the circular objects below.
   (b) Represent the ratio circumference : diameter in the form of a:1
   (c) Summarize your findings

Object	Circumference	Diameter	Circumference:Diameter
	180 cm	53cm	180.53 3.396:1
	191cm	60 cm	191:60 3.183:1
	620 m	175cm	124:35 3.542857:1

Annotations

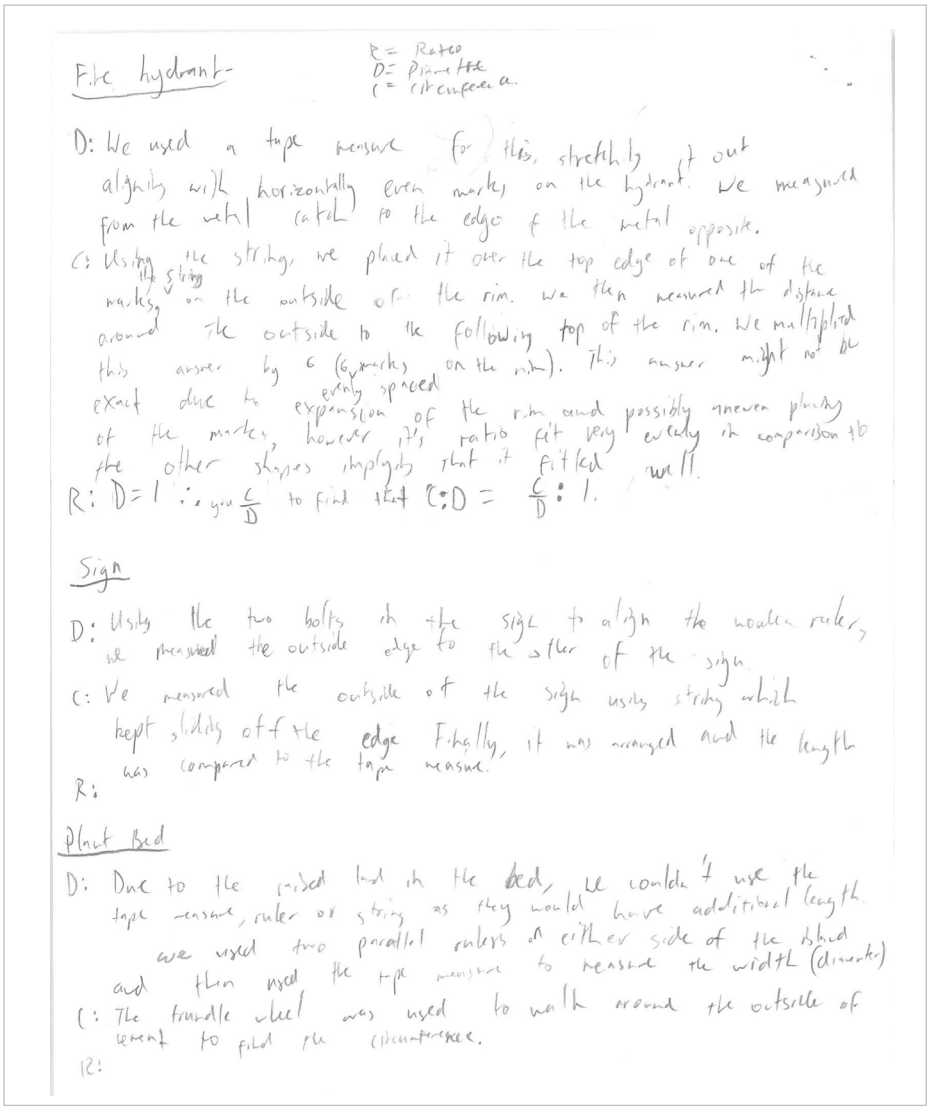
Names and indicates some parts of a circle.

Measures the circumference and diameter of a variety of circular objects with reasonable accuracy.

Determines the ratio of the circumference to the diameter and writes it in the form a:1.

Obtains several reasonable approximations for the irrational number π.

Number and measurement: Investigating circles



F.te hydrant-

R= Rated
D= Diameter
C= Circumference

D: We used a tape measure for this, stretching it out aligning with horizontally even marks on the hydrant. We measured from the metal catch to the edge of the metal opposite.

C: Using the string, we placed it over the top edge of one of the marks, on the outside of the rim. We then measured the distance around the outside to the following top of the rim. We multiplied this answer by 6 (6 marks on the rim). This answer might not be exact due to expansion of the rim and possibly uneven placing of the marks, however it's ratio fit very evenly in comparison to the other shapes implying that it fitted well.

R: D=1 ∴ you $\frac{C}{D}$ to find that C:D = $\frac{C}{D}$: 1.

Sign

D: Using the two bolts in the sign to align the wooden ruler, we measured the outside edge to the other of the sign.

C: We measured the outside of the sign using string which kept sliding off the edge. Finally, it was arranged and the length was compared to the tape measure.

R:

Plant Bed

D: Due to the raised land in the bed, we couldn't use the tape measure, ruler or string as they would have additional length. we used two parallel rulers on either side of the bed and then used the tape measure to measure the width (diameter).

C: The trundle wheel was used to walk around the outside of bed to find the circumference.

R:

Annotations

Describes in detail how the circumference and diameter of each object was measured and identifies possible sources of error in the measurement processes used.

Mathematics

Year 8
Above satisfactory

Number and measurement: Investigating circles

Is Circular Drive Circular?

Design and conduct an investigation to determine whether the concrete boundary of Circular Drive is a perfect circle.

23.13 m diameter

75.3 circumference

753 : 231.3

3.2555 : 1

Circular Drive:

D: Quite difficult due to lack of extension of the tape measure. Might be bigger than legitimate measurement. We measured the 8 m, left a mark and moved the tape up to the next mark repetitively (3 times) until we hit the edge.

C: Used the trundle wheel along the outside of the cement counting the metres.

R: The ratio fits perfectly between the 2 outlying numbers and the median average of the other objects, all apparently circular, proving that circular drive is in fact circular.

Annotations

Obtains reasonable measurements for the diameter and circumference.

Determines the ratio of the circumference to the diameter.

Concludes that the drive is circular by observing that the ratio of the circumference to the diameter has a value close to those found for other circular objects.

Mathematics

Year 8
Above satisfactory

Geometry: Congruence

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students had completed a unit of work on congruence in which they used transformations to create congruent figures and investigated the conditions for the congruence of triangles.

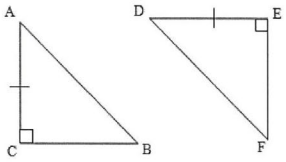
Students were asked to demonstrate and apply their knowledge of transformations and the conditions for the congruence of triangles. They completed the task in class under exam conditions.

Mathematics

Year 8
Above satisfactory

Geometry: Congruence

1 Identify the matching side and angles in these congruent triangles.

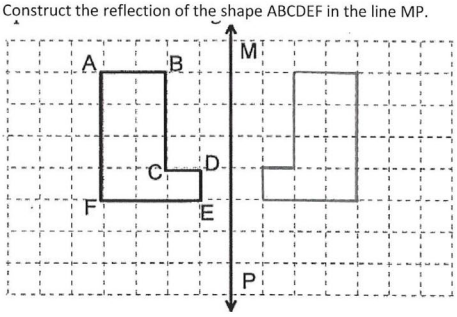


BC = FE

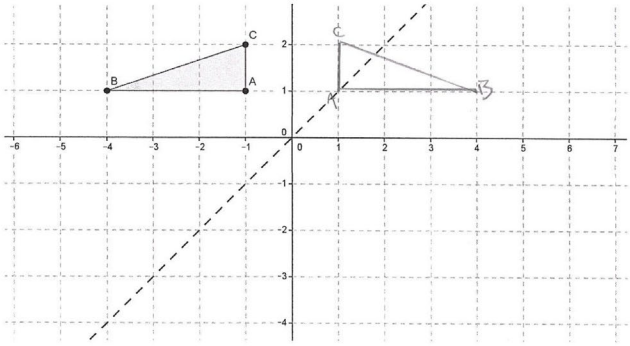
∠ABC = DFE

∠ACB = DEF

2 Construct the reflection of the shape ABCDEF in the line MP.



3 Construct the reflection of the triangle ABC in the dotted line. Label your new vertices A′, B′ and C′.

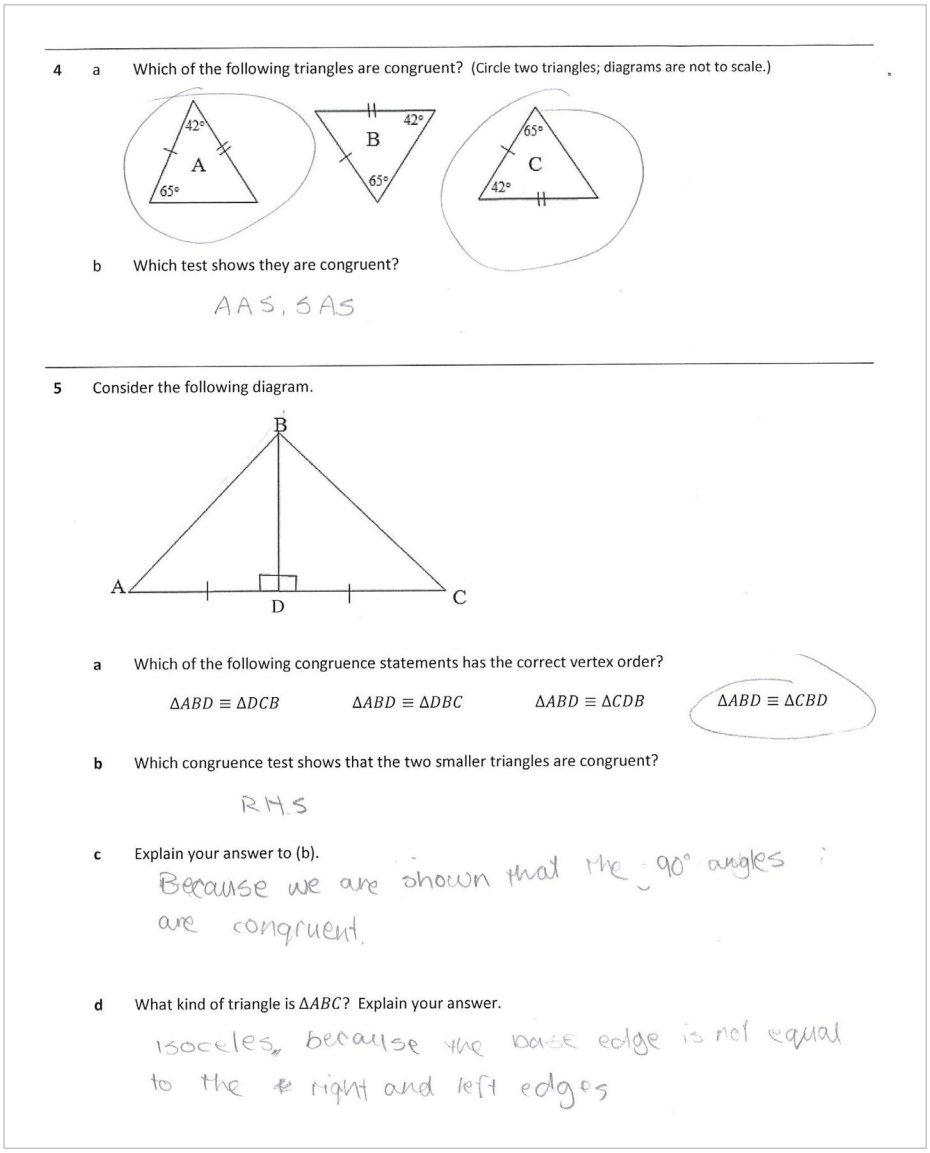


Annotations

Identifies and names corresponding sides and angles of congruent triangles in matching order.

Reflects a figure in a vertical axis.

Geometry: Congruence



4 a Which of the following triangles are congruent? (Circle two triangles; diagrams are not to scale.)

b Which test shows they are congruent?

AAS, SAS

5 Consider the following diagram.

a Which of the following congruence statements has the correct vertex order?

$\Delta ABD \equiv \Delta DCB$ $\Delta ABD \equiv \Delta DBC$ $\Delta ABD \equiv \Delta CDB$ $\Delta ABD \equiv \Delta CBD$

b Which congruence test shows that the two smaller triangles are congruent?

RHS

c Explain your answer to (b).

Because we are shown that the 90° angles are congruent.

d What kind of triangle is ΔABC? Explain your answer.

isoceles, because the base edge is not equal to the right and left edges

Annotations

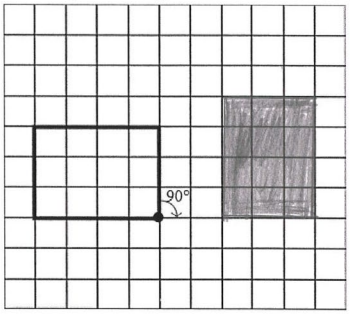
Selects a pair of congruent triangles.

States all appropriate tests that can be used to show that the triangles are congruent.

Attempts to identify the correct test for congruency.

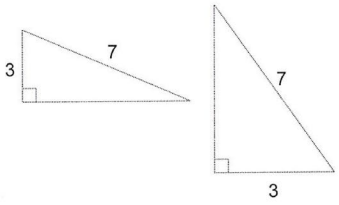
Geometry: Congruence

6 The rectangle in the diagram is to be rotated 90° clockwise about the marked point.



Draw the resulting rectangle inside the diagram.

7 a State the congruence test that applies to the following two triangles. (The diagram is not to scale.)

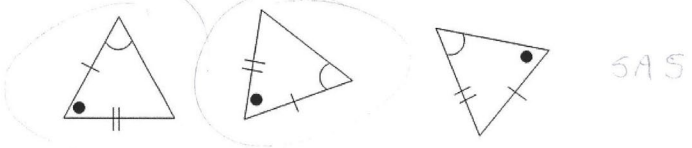


RHS

b Explain how the two triangles above could instead be proved congruence by the SSS test.

Because if we use the lengths (7 and 3) we can find the missing length with Pythagorus Theorem.

8 Circle the two congruent triangles below, and state the applicable congruence test.



SAS

Annotations

Rotates a figure by the desired angle but does not use the correct centre of rotation.

Recognises the connection to Pythagoras' Theorem and explains how this could be used to prove the triangles are congruent by a different test.

Identifies the two congruent triangles and states a test that can be used to show that the triangles are congruent.

Mathematics

Year 8
Above satisfactory

Measurement: Perimeter and area

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They recognise index laws and apply them to whole numbers. They describe rational and irrational numbers. Students solve problems involving profit and loss. They make connections between expanding and factorising algebraic expressions. Students solve problems relating to the volume of prisms. They make sense of time duration in real applications. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students model authentic situations with two-way tables and Venn diagrams. They choose appropriate language to describe events and experiments. They explain issues related to the collection of data and the effect of outliers on means and medians in that data.*
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> *Students use efficient mental and written strategies to carry out the four operations with integers. They simplify a variety of algebraic expressions. They solve linear equations and graph linear relationships on the Cartesian plane. Students convert between units of measurement for area and volume. They perform calculations to determine perimeter and area of parallelograms, rhombuses and kites. They name the features of circles and calculate the areas and circumferences of circles. Students determine complementary events and calculate the sum of probabilities.*

Summary of task

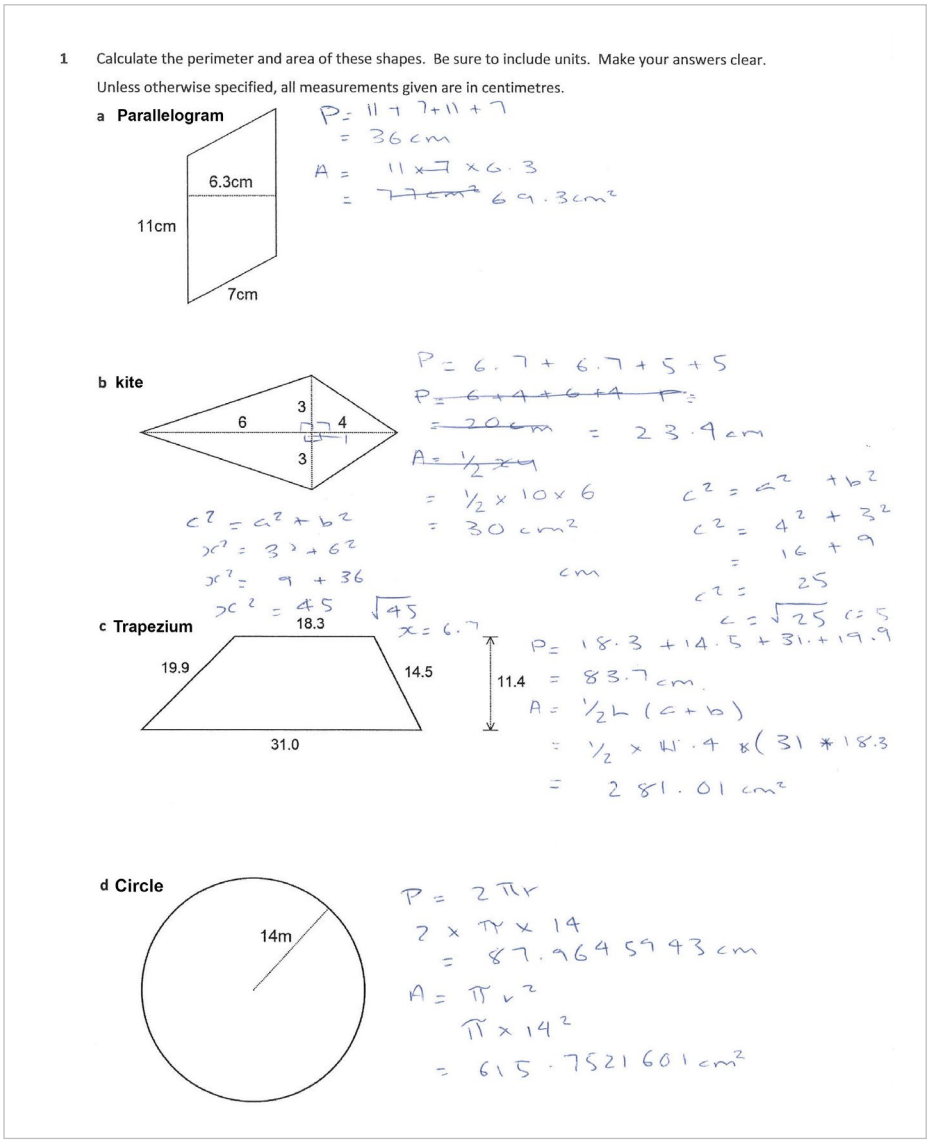
Students completed a unit of work on finding the perimeter and area of a range of two-dimensional shapes.

The task required students to answer a number of questions related to the perimeter and area of a range of two-dimensional shapes, including circles. Students were asked to apply their skills to some real-world problems. They completed the task under exam conditions in class time.

Mathematics

Year 8
Above satisfactory

Measurement: Perimeter and area



1 Calculate the perimeter and area of these shapes. Be sure to include units. Make your answers clear.
Unless otherwise specified, all measurements given are in centimetres.

a Parallelogram

6.3cm
11cm
7cm

$P = 11 + 7 + 11 + 7$
$= 36\text{ cm}$
$A = 11 \times 7 \times 6.3$
$= 69.3\text{cm}^2$

b kite

6
3
4
3

$P = 6.7 + 6.7 + 5 + 5$
$= 23.4\text{cm}$
$A = \frac{1}{2} \times 10 \times 6$
$= 30\text{ cm}^2$

$c^2 = a^2 + b^2$
$x^2 = 3^2 + 6^2$
$x^2 = 9 + 36$
$x^2 = 45$
$x = 6.7$

$c^2 = a^2 + b^2$
$c^2 = 4^2 + 3^2$
$= 16 + 9$
$c^2 = 25$
$c = \sqrt{25}$ $c = 5$

c Trapezium

18.3
19.9
14.5
11.4
31.0

$P = 18.3 + 14.5 + 31 + 19.9$
$= 83.7\text{ cm}$
$A = \frac{1}{2}h(a+b)$
$= \frac{1}{2} \times 11.4 \times (31 + 18.3)$
$= 281.01\text{ cm}^2$

d Circle

14m

$P = 2\pi r$
$2 \times \pi \times 14$
$= 87.964594\,3\text{ cm}$
$A = \pi r^2$
$\pi \times 14^2$
$= 615.7521601\text{ cm}^2$

Annotations

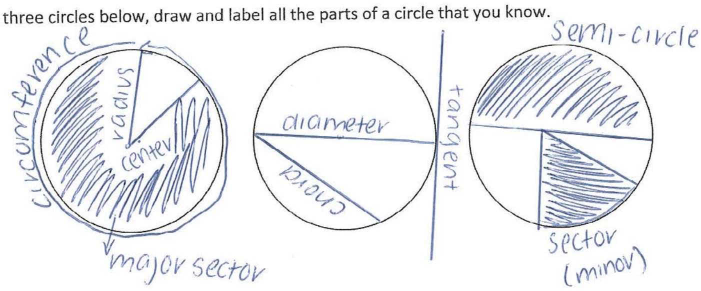
Determines the perimeter of various plane shapes.

Uses appropriate formulas to determine the areas of typical plane shapes.

Uses Pythagoras' Theorem to calculate the lengths of unknown sides in order to determine the perimeter.

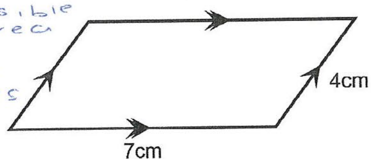
Measurement: Perimeter and area

2 Using the three circles below, draw and label all the parts of a circle that you know.

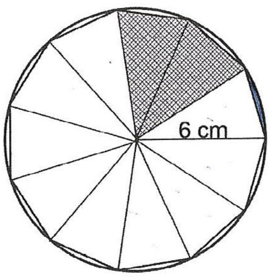


3 Explain why it is not possible to find the area of this shape.

IT is not possible to find the area of this shape as the diagram does not give valid heights.



4



A reasonable estimate for the shaded area is (in cm^2 – circle one)

12 16 (20) ~~25~~

Explain your answer.

~~2πr~~ πr² = 113.0973355 ÷ 11
= 3 ~~7.6991184~~ ÷ 11 = 10.28157
= ~~3.427191986 ×2~~
= ~~6.85~~

5.96
×2
= 20.5631519

Annotations

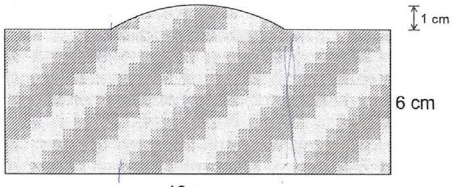
Draws and names almost all parts of a circle.

Provides a reasonable explanation for why an area cannot be determined.

Provides an estimate for the area of a shape by applying a known formula and reasoning about the relationship of this calculated area to the area that is to be estimated.

Measurement: Perimeter and area

5 The following diagram is drawn to scale.



Estimate the shaded area (nearest cm^2), explaining your answer (with words and/or diagrams).

16 x 6 = 96

E: 99 cm^2

To find the area you dimes the 16 and 6 together to get 96 then the small semi-circle like b umlp does'nt show a big area so i estimeted that it was 3 cm^2.

6 a The Earth is approximately a sphere. Its diameter is 12 755 km. Find the distance around the equator.

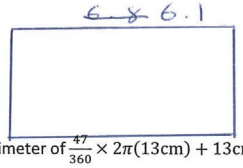
$2\pi r$
$= 2 \times \pi \times r$
$= 2 \times \pi \times 6377.5$
$= 40071.0143$ km

b The Earth spins on its axis once every 24 hours. If you stand on the equator, you are moving through space very fast because of the Earth's rotation. Calculate this speed.

7 Draw a diagram of a figure (neat, shaded, but not to scale) that has:

a an area of $(6\text{cm} \times 4\text{cm}) - \pi(2\text{cm})^2$

6 x 6.1



b a perimeter of $\frac{47}{360} \times 2\pi(13\text{cm}) + 13\text{cm} + 13\text{cm}$

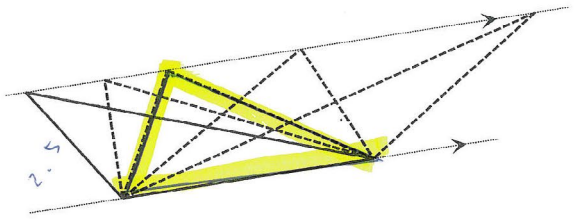
Annotations

Determines the area of the rectangle correctly and then estimates the area of the segment to be bigger than one square centimetre.

Connects the concept of the circumference of a circle to solve a real-world problem in three dimensions.

Measurement: Perimeter and area

8 Several triangles are drawn inside two parallel lines in the diagram below.



a Explain why all the triangles shown have the same area.

They are all the same area because they have same base and perpendicular height

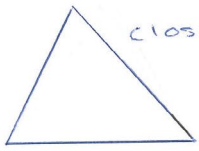
b Using appropriate measurements with your ruler, calculate their area.

$\frac{1}{2}bh$

$= \frac{1}{2} \times 2.5 \times 5.5$

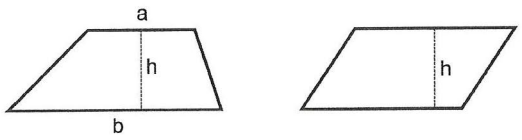
$= 6.875$

c Of all the possible triangles you could draw that are like those above, one triangle has the smallest perimeter. Draw this triangle in the diagram above, and briefly explain your answer.



closest to the middle is smaller

9 The trapezium and the parallelogram shown have the same area. How long is the base of the parallelogram?



Annotations

Explains why the triangles have the same area using appropriate mathematical terminology.

Indicates that a triangle with a vertex that is opposite the centre of the base will result in the triangle of smallest perimeter.

Mathematics

Year 8
Above satisfactory

Number: Integers

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 8, students solve everyday problems involving rates, ratios and percentages. They recognise index laws and apply them to whole numbers. They describe rational and irrational numbers. Students solve problems involving profit and loss. They make connections between expanding and factorising algebraic expressions. Students solve problems relating to the volume of prisms. They make sense of time duration in real applications. They identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. Students model authentic situations with two-way tables and Venn diagrams. They choose appropriate language to describe events and experiments. They explain issues related to the collection of data and the effect of outliers on means and medians in that data.*
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Summary of task

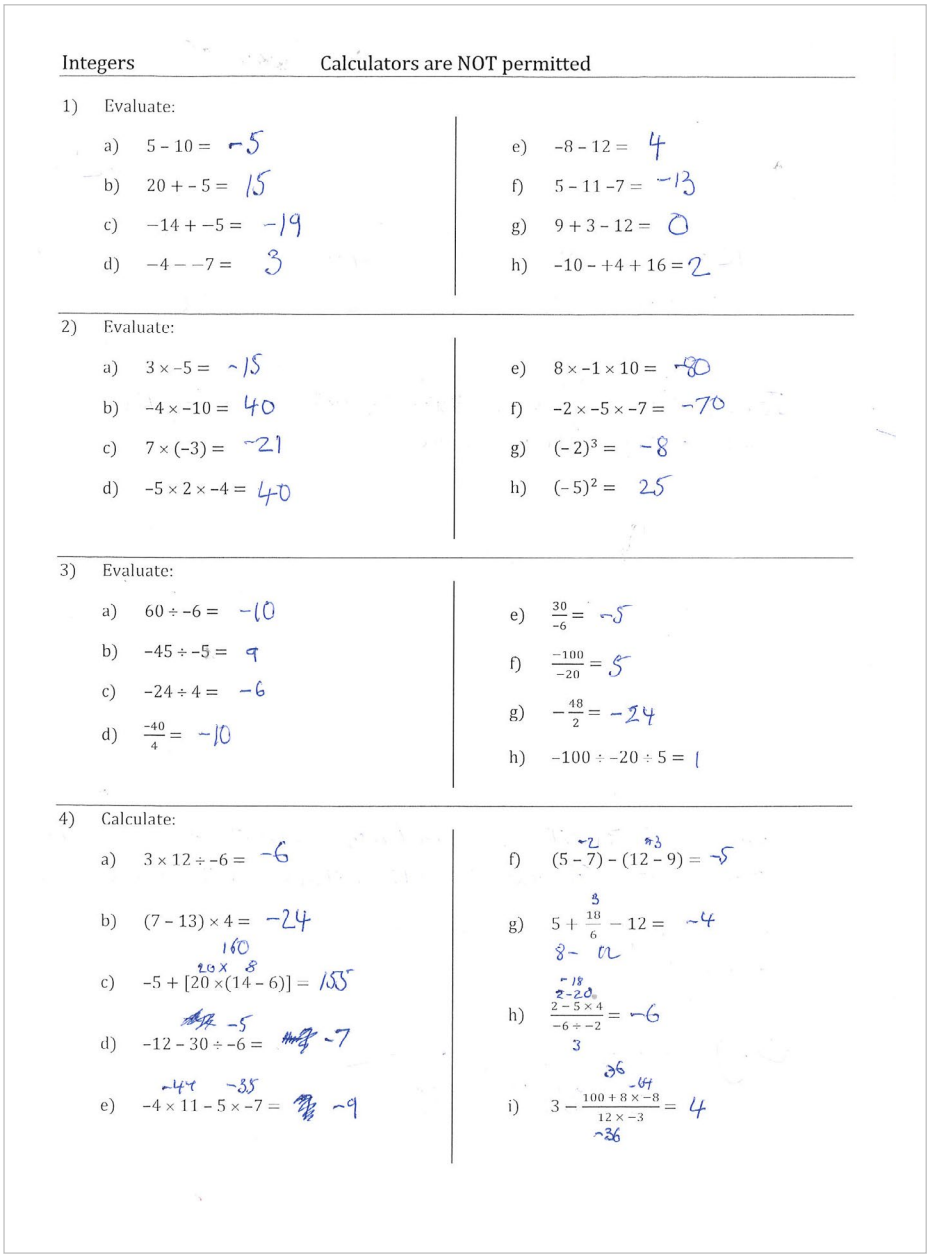
Students had completed a unit of work on integers.

Students were asked a series of questions that involved calculation and reasoning with integers. The use of calculators was not permitted and students were given 20 minutes of class time to complete the task.

Mathematics

Year 8
Above satisfactory

Number: Integers



Integers Calculators are NOT permitted

1) Evaluate:

a) $5 - 10 =$ -5
b) $20 + -5 =$ 15
c) $-14 + -5 =$ -19
d) $-4 - -7 =$ 3
e) $-8 - 12 =$ 4
f) $5 - 11 - 7 =$ -13
g) $9 + 3 - 12 =$ 0
h) $-10 - +4 + 16 =$ 2

2) Evaluate:

a) $3 \times -5 =$ -15
b) $-4 \times -10 =$ 40
c) $7 \times (-3) =$ -21
d) $-5 \times 2 \times -4 =$ 40
e) $8 \times -1 \times 10 =$ -80
f) $-2 \times -5 \times -7 =$ -70
g) $(-2)^3 =$ -8
h) $(-5)^2 =$ 25

3) Evaluate:

a) $60 \div -6 =$ -10
b) $-45 \div -5 =$ 9
c) $-24 \div 4 =$ -6
d) $\frac{-40}{4} =$ -10
e) $\frac{30}{-6} =$ -5
f) $\frac{-100}{-20} =$ 5
g) $-\frac{48}{2} =$ -24
h) $-100 \div -20 \div 5 =$ 1

4) Calculate:

a) $3 \times 12 \div -6 =$ -6
b) $(7 - 13) \times 4 =$ -24
c) $-5 + [20 \times (14 - 6)] =$ 155 (160, 20×8)
d) $-12 - 30 \div -6 =$ -7 (-5)
e) $-4 \times 11 - 5 \times -7 =$ -9 (-44, -35)
f) $(5 - 7) - (12 - 9) =$ -5 (-2, -3)
g) $5 + \frac{18}{6} - 12 =$ -4 (5, $8 - 12$)
h) $\frac{2 - 5 \times 4}{-6 \div -2} =$ -6 (-18, $2 - 20$, 3)
i) $3 - \frac{100 + 8 \times -8}{12 \times -3} =$ 4 (36, -64, -36)

Annotations

Adds and subtracts integers but makes an error.

Multiplies integers.

Divides integers.

Applies the order of operations to correctly evaluate expressions involving integers.

Mathematics

Year 8
Above satisfactory

Number: Integers

5) At 12 am on Monday, the temperature in Vladivostok was recorded as −8°C. By 6 am the temperature had risen by 3°C. By noon the temperature had risen by a further 7°C. At 6 pm the temperature was −5°C.

What was the change in temperature between noon and 6 pm?

12°C

12 am −8°C | 6 am 3°C | 12 pm 7°C | 6 pm −5°C

6) Is the value of $(-46)^{86}$ positive or negative? Give a reason for your answer.
[Note: You do no need to find the value of $(-46)^{86}$].

It is positive as even ~~integers~~ positive exponents on a negative base number are always positive.

7) Place a number in each box to make the statements true:

a) $20 + \boxed{-80} = -60$

b) $35 - 5 \times \boxed{-8} = 75$

8) Tom wrote:

'If a question with integers involves exactly two minus signs, one plus sign, and no other operations, then the answer is positive.'

Is Tom's statement always correct or sometimes correct or never correct? Provide at least one example to support your decision.

Tom's statement is sometimes correct due to the fact that due to the nature that the operations are arranged, the answer can be positive or negative:

e.g. $2 + -3 - 1 = -2$

$2 + -3 - -3 = 6$

Annotations

Determines the correct answer and explains their reasoning using appropriate mathematical terminology.

Determines correct solutions to number sentences involving integers and including the order of operations.

Determines the validity of a given statement, justifying their decision with an appropriate explanation and examples.

Number: Percentages

Year 8 Mathematics achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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Summary of task

Students were given a task to complete in class time after a unit of work on profit and loss.

Number: Percentages

Suppose you have a grandmother who gives you one cent on your first birthday. The next year she gives you 3 cents, the following year 9 cents. Each year she triples the amount she gave the year before. Leave all answers correct to two decimal places.

a) How much money would you have on your 14th Birthday?

BIRTHDAY	MONEY
1 1	1c
2 3	3c
3 9	9c
4 27	27c
5 81	81c
6 243	$ 2.43
7 729	$ 7.29
8 2187	$21.87
9 6561	$65.61
10 19683	$196.83
11 59049	$590.49
12 177147	$1771.47
13 531441	$5314.41
14 1594303	$15943.23
TOTAL 2391984	$23914.84

b) What percentage is the amount of money on your 14th birthday to the total money given by your grandmother

$15943.23
÷ $23914.84 = ~~66.%~~
0.6667 ×100
66.67 %

You are going to use the money your grandmother gave you to refurbish the study at home. Let us do our homework

FLUENCY:

1) Find the selling price of each of the following products from the product catalogue

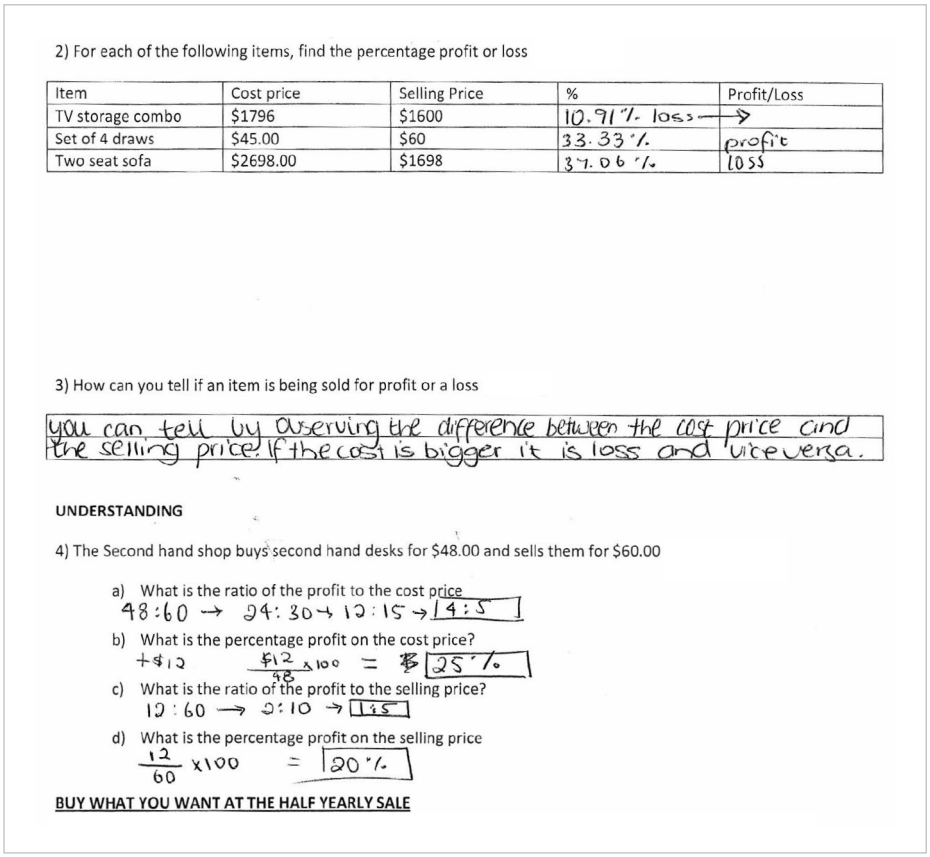
Item	Cost price	%	Profit/ loss	Selling Price
TV storage combo	$1796	30%	profit	$2334.80
Set of 4 draws	$45.00	75%	loss	$ 11.25
Two seat sofa	$2698.00	$33\frac{1}{3}$ %	profit	$3601.83

Annotations

Calculates required percentage.

Solves simple profit and loss problems but with an error.

Number: Percentages



2) For each of the following items, find the percentage profit or loss

Item	Cost price	Selling Price	%	Profit/Loss
TV storage combo	$1796	$1600	10.91% loss →	
Set of 4 draws	$45.00	$60	33.33%	profit
Two seat sofa	$2698.00	$1698	37.06%	LOSS

3) How can you tell if an item is being sold for profit or a loss

you can tell by observing the difference between the cost price and the selling price! If the cost is bigger it is loss and vice versa.

UNDERSTANDING

4) The Second hand shop buys second hand desks for $48.00 and sells them for $60.00

a) What is the ratio of the profit to the cost price
48:60 → 24:30 → 12:15 → 4:5

b) What is the percentage profit on the cost price?
+$12 $\frac{\$12}{48} \times 100 = 25\%$

c) What is the ratio of the profit to the selling price?
12:60 → 2:10 → 1:5

d) What is the percentage profit on the selling price
$\frac{12}{60} \times 100 = 20\%$

BUY WHAT YOU WANT AT THE HALF YEARLY SALE

Annotations

Calculates percentage profit and loss.

Draws conclusions based on reason.

Calculates and simplifies ratios and percentages, but with one error in interpretation.

Mathematics

Year 8
Above satisfactory

Number: Percentages

Cushion SALE		
Alvine flora	$20.00	Now reduced by 25%
Alvina spetsig	$11.00	Now reduced by 40%
Stockholm	$13.00	Now reduced by 20%
Eivor Krist	$18.00	Now reduced by 25%

5)a) Before the sale, how much would it cost to buy an Alvine flora cushion and a Stockholm cushion?

Alvine Flora	$20.00
Stockholm cushion	$13.00

b) What items could you buy before the sale if you had $50 to spend?

Alvine Flora	$20.00
Alvina spetsig	$11.00
Eivor Krist	$18
Total=	$49

c) Calculate the sale price of the 3 cushions advertised

Alvine flora	$15
Alvina spetsig	$6.60
Stockholm	$10.90

d) How much would it cost to buy an Alvine flora cushion and a Stockholm cushion at the sale?

Alvine Flora	$15
Stockholm cushion	$10.90

total = $25.90

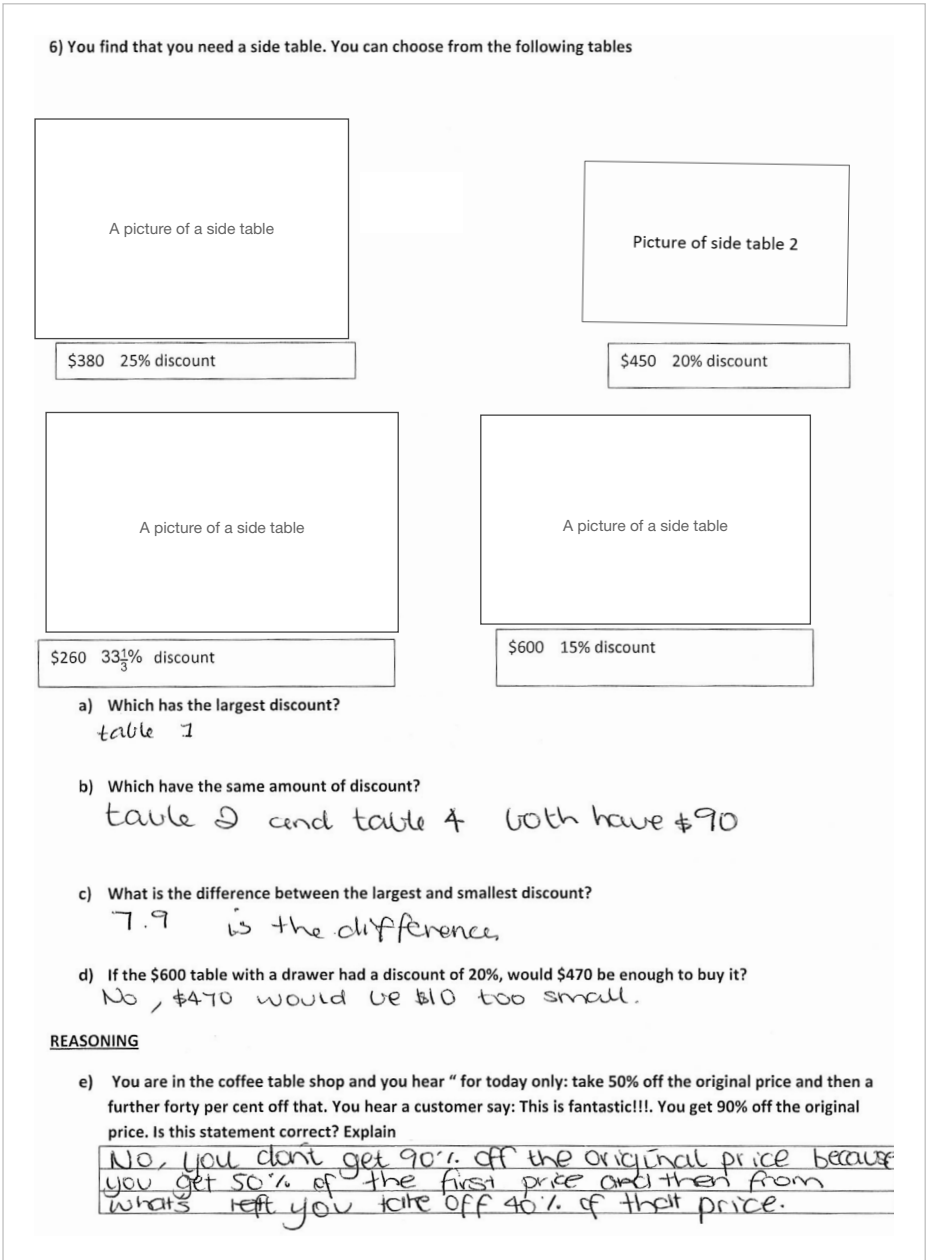
e) How much have you saved by buying these 2 items at the sale rather than before the sale?

Alvine Flora	$5.00
Stockholm cushion	$2.60

Annotations

Performs the required calculations.

Number: Percentages



6) You find that you need a side table. You can choose from the following tables

A picture of a side table

$380 25% discount

Picture of side table 2

$450 20% discount

A picture of a side table

$260 $33\frac{1}{3}$% discount

A picture of a side table

$600 15% discount

a) Which has the largest discount?

table 1

b) Which have the same amount of discount?

table 2 and table 4 both have $90

c) What is the difference between the largest and smallest discount?

7.9 is the difference.

d) If the $600 table with a drawer had a discount of 20%, would $470 be enough to buy it?

No, $470 would be $10 too small.

REASONING

e) You are in the coffee table shop and you hear " for today only: take 50% off the original price and then a further forty per cent off that. You hear a customer say: This is fantastic!!!. You get 90% off the original price. Is this statement correct? Explain

No, you don't get 90% off the original price because you get 50% of the first price and then from whats left you take off 40% of that price.

Annotations

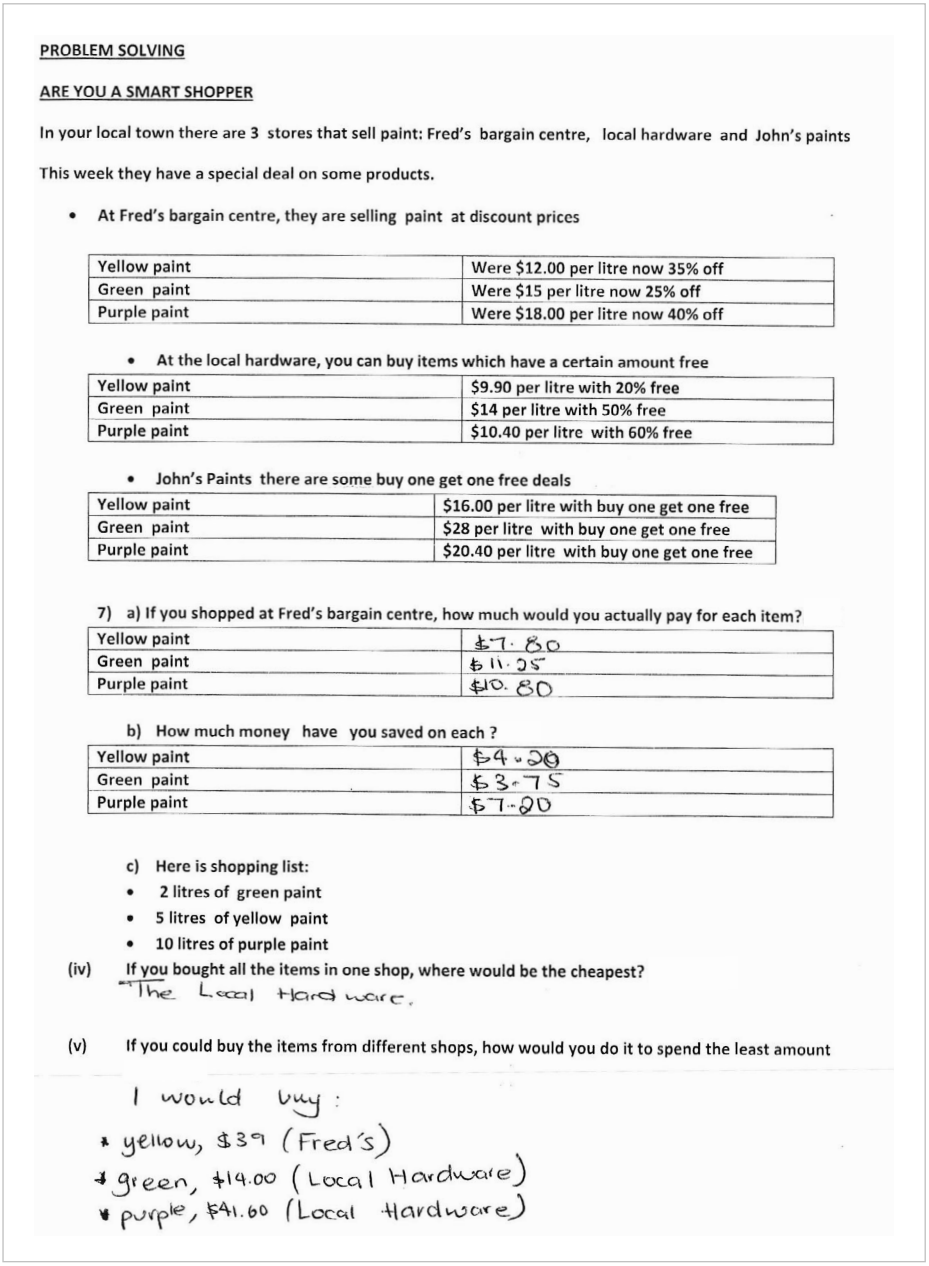
Reasons with explanations.

Understands the difference between calculating correctly the solution in two stages and the method implied in the customer's comment.

Mathematics

Year 8
Above satisfactory

Number: Percentages



PROBLEM SOLVING

ARE YOU A SMART SHOPPER

In your local town there are 3 stores that sell paint: Fred's bargain centre, local hardware and John's paints

This week they have a special deal on some products.

- At Fred's bargain centre, they are selling paint at discount prices

Yellow paint	Were $12.00 per litre now 35% off
Green paint	Were $15 per litre now 25% off
Purple paint	Were $18.00 per litre now 40% off

- At the local hardware, you can buy items which have a certain amount free

Yellow paint	$9.90 per litre with 20% free
Green paint	$14 per litre with 50% free
Purple paint	$10.40 per litre with 60% free

- John's Paints there are some buy one get one free deals

Yellow paint	$16.00 per litre with buy one get one free
Green paint	$28 per litre with buy one get one free
Purple paint	$20.40 per litre with buy one get one free

7) a) If you shopped at Fred's bargain centre, how much would you actually pay for each item?

Yellow paint	$7.80
Green paint	$11.25
Purple paint	$10.80

b) How much money have you saved on each ?

Yellow paint	$4.20
Green paint	$3.75
Purple paint	$7.20

c) Here is shopping list:

- 2 litres of green paint
- 5 litres of yellow paint
- 10 litres of purple paint

(iv) If you bought all the items in one shop, where would be the cheapest?

The Local Hardware.

(v) If you could buy the items from different shops, how would you do it to spend the least amount

I would buy:

- yellow, $39 (Fred's)
- green, $14.00 (Local Hardware)
- purple, $41.60 (Local Hardware)

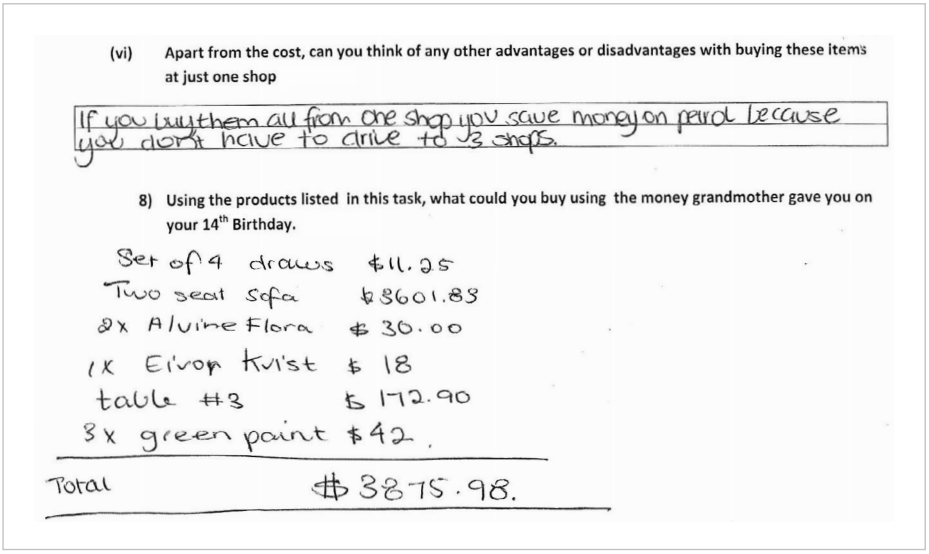
Annotations

Answers required questions to enable calculations.

Mathematics

Year 8
Above satisfactory

Number: Percentages



(vi) Apart from the cost, can you think of any other advantages or disadvantages with buying these items at just one shop

If you buy them all from one shop you save money on petrol because you don't have to drive to 3 shops.

8) Using the products listed in this task, what could you buy using the money grandmother gave you on your 14th Birthday.

Set of 4 draws	$11.25
Two seat Sofa	$3601.83
2x Alvine Flora	$30.00
1x Eivor Kvist table #3	$18 $172.90
3x green paint	$42.
Total	$3875.98.

Annotations

Demonstrates logical reasoning.

Selects items and calculates totals.