YEAR 8/9 TEST

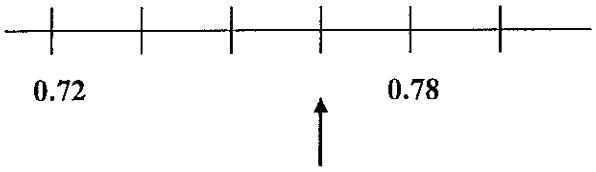
SECTION A: NUMBER (20 Marks)

Name:_____

Teacher's Name:_____

QUESTIONS 1-10 (1 mark each)	ANSWER
1. Write $\frac{3}{8}$ as a decimal.	
2. Convert $8\frac{1}{4}\%$ to a fraction.	
3. Write 10 203 in expanded form.	
4. Round 21.379 to the nearest tenth.	
5. Express $\frac{18}{45}$ as a percentage.	
6. Calculate $(-3)^2-(-4)^2$.	
7. Evaluate $2\times-3+12\div-4$	
8. $\frac{4}{5}$ is equivalent to $\frac{48}{\quad}$	
9. Find 15% of \$2.40	
10. Arrange in ascending order: 0.203, 0.23, 0.0203, 0.302	

11.



What number is the arrow pointing to ? _____ **(1)**

12. True or false ? $\frac{3}{7} > \frac{2}{6}$ _____ **(1)**

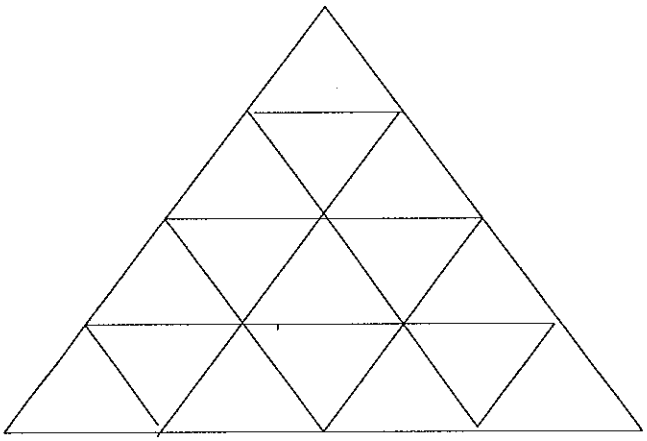
Name:_____

Teacher's Name:_____

13. Evaluate: $1\frac{1}{3} - \frac{6}{11}$ **(1)**

14. Evaluate: $\frac{8}{5} \times \frac{5}{8}$ **(1)**

15. What fraction of the diagram is shaded ? _____ **(1)**



16. Insert brackets to make this statement true. **(1)**

$$9 \div 3 + 4 \times 7 = 49$$

17. A tin of fishcake mix contains 240g of salmon, 156g of potato, 24g of seasoning and 16g of cornflour. Find the percentage by weight of salmon. **(1)**

Name:_____

Teacher's Name:_____

18. Mark bought a barrel containing 30 L of orange juice.
If he drank $1\frac{1}{4}$ L every day, how long will the barrel last ? **(1)**

19. Matthew receives \$36 per 1 000 newspapers he delivers, how much will he receive if he delivers 2 500 newspapers ? **(1)**

20. A tank when $\frac{3}{4}$ full contains 81 litres. What is the capacity of the tank ? **(1)**

END OF SECTION A

SECTION B: ALGEBRA (20 Marks)

Name:_____

Teacher's Name:_____

1. Simplify: $4a-2ab+3a$ **(1)**

2. Evaluate: $\left(3x^4\right)^2$ **(1)**

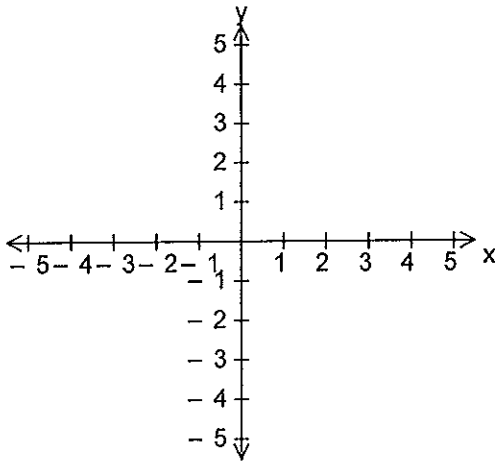
3. Simplify: $d^2e\times 2d^3e$ **(1)**

4. Expand and simplify: $3(2-a)-(a+4)$ **(2)**

5. Complete the table of values using the given rule and then plot the points. **(4)**

$y = 2x - 1$

x	-1	0	1	2
y				



6. If $a=\frac{1}{2}$ $b=-5$ and $c=4$ find the value of $\frac{ab}{c}$, as a fraction. **(1)**

7. Tony has y marbles. His friend Lyn has 5 marbles less than he has.
How many marbles are there altogether ? **(2)**

8. Find the rule: **(2)**

m	2	4	6	8
t	-6	-8	-10	-12

$t = \square\, m - \triangle$

9. Solve: $3x - 2 = 13$ **(1)**

10. If the first odd number in a pattern is n, what are the next two consecutive even numbers ?

(2)

11. A number is multiplied by four and then three is added. The answer is twenty seven.
Write an equation and then solve it to find the number. **(3)**

END OF SECTION B

SECTION C: PROBLEM SOLVING (10 Marks)

Name:_____

Teacher's Name:_____

1. Linda is five times as old as her daughter Mia. Together their ages add up to 36 years. How old are Linda **and** Mia ? **(1)**

2. How many numerals less than 100 contain the digit 5 ? **(1)**

3. A can with 30 marbles weighed 120 grams. The same can with 15 marbles weighed 95 grams. What is the weight of the can ? **(2)**

4. The hare challenges the tortoise to a race. The hare can travel 10 m for every 1m travelled by the tortoise. If they continue to travel at this rate, by how far will the hare beat the tortoise by if the race is over 100 m ? **(2)**

5. A container when half full holds 3.6 L. How much more fluid is needed to make it $\frac{2}{3}$ full ?

(2)

6. How many different ways can the letters B, H, T and M be arranged so that the T is the 3rd or 4th letter ? **(2)**

END OF SECTION C

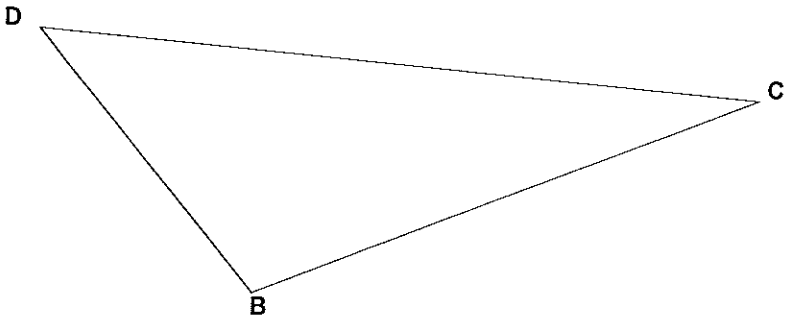
SECTION D: GEOMETRY (20 Marks)

Name:_____

Teacher's Name:_____

1. Draw the net of a pentagonal pyramid. **(1)**

2. Use a protractor to measure the size of $\angle DCB$ shown in the diagram. **(1)**



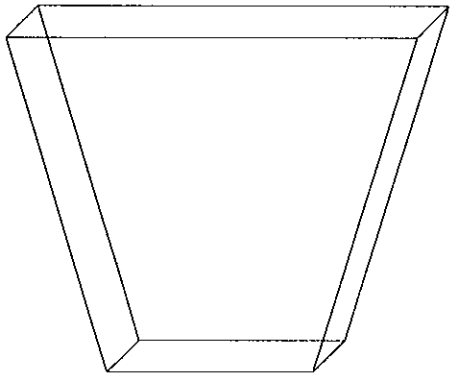
$\angle DCB =$ _____

3. Draw and label a pair of lines that are perpendicular to each other. **(1)**

Name:_____

Teacher's Name:_____

4. How many faces, edges and vertices does the following shape have? **(3)**

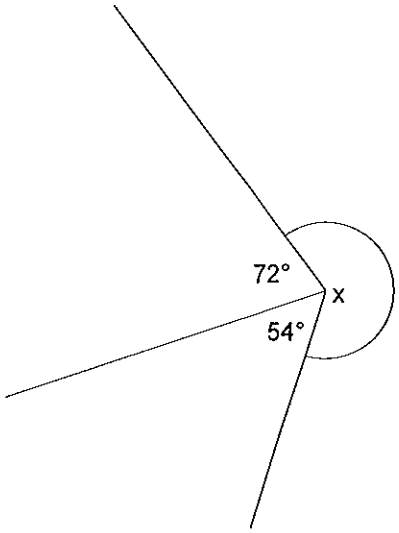


Faces _____

Edges_____

Vertices_____

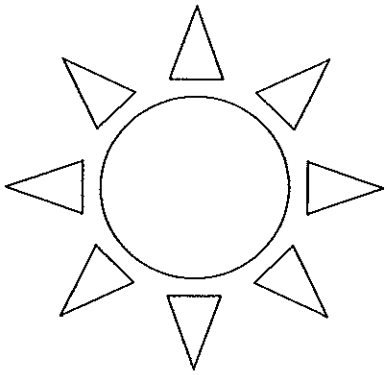
5. Find the value of x, giving reasons **(2)**



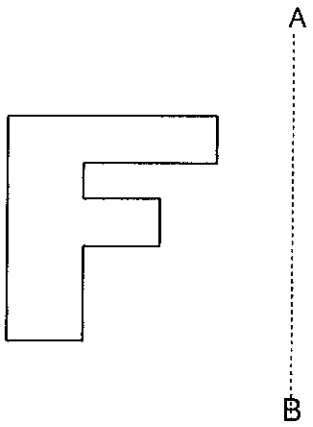
x = _____

Reason_____

6. Draw ALL the axes of symmetry on the following shape. **(2)**

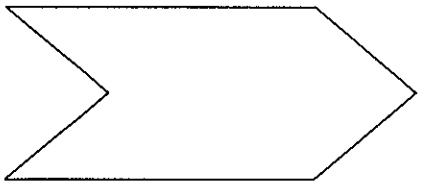


7. Reflect the F about the line AB **(1)**



8. Write a property of a trapezium (you may use a diagram to help you). **(1)**

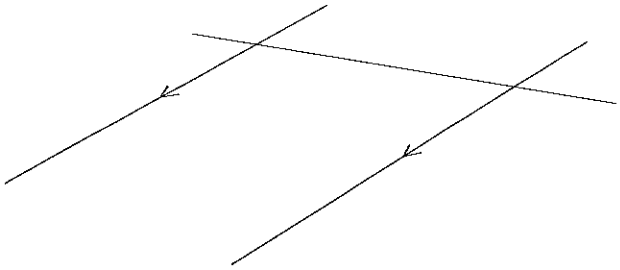
9. Can the following shape tessellate? **(1)**



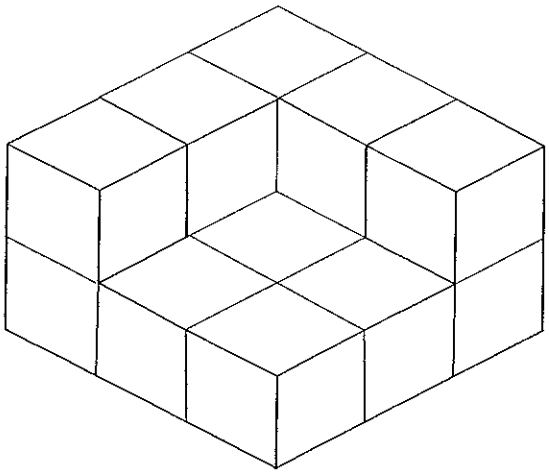
Name:_____

Teacher's Name:_____

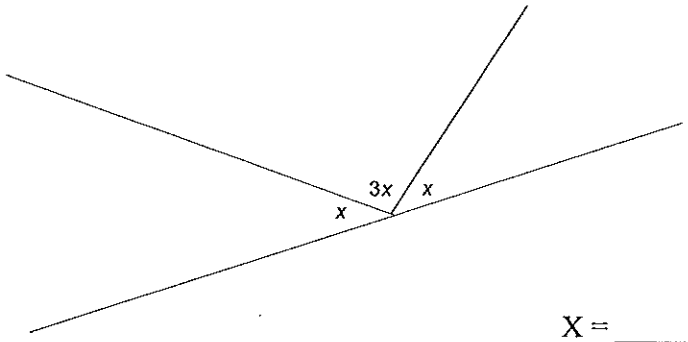
10. Draw and label a pair of corresponding angles. **(1)**



11. How many cubes make up the following diagram? **(1)**



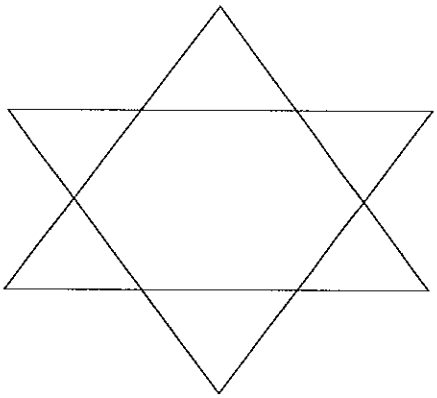
12. Find the value of x **(2)**



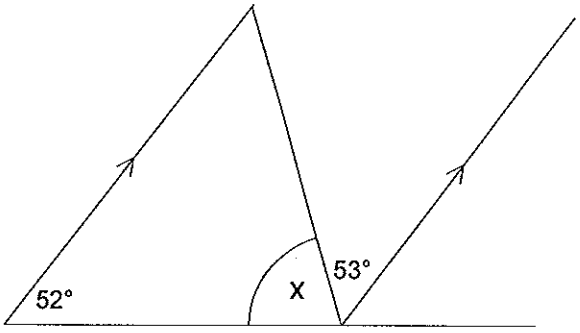
X = _____

13. What is the obtuse angle between the hour and minute hand at 4 o'clock? (1)

14. The Star of David consists of two equilateral triangles. Name another shape in the Star. (1)



15. Find the value of x. (1)



x = _____

END OF SECTION D

SECTION E: MEASUREMENT (20 Marks)

Name:_____

Teacher's Name:_____

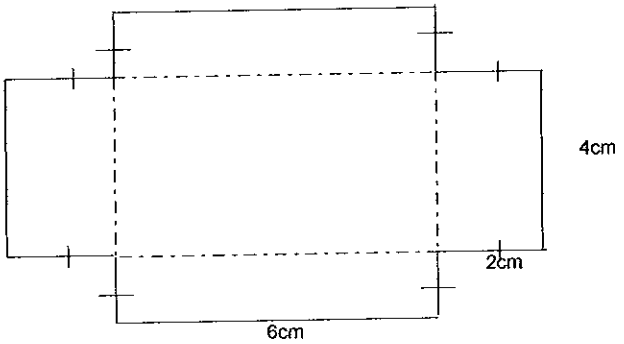
QUESTIONS 1-5 (1 mark each)	ANSWER
1. Convert 23 mm to m.	
2. Convert 2 hours to seconds.	
3. Convert 42.7 km to m.	
4. Convert 3.2 L to mL.	
5. Convert 150 g to kg	

6. What is the time difference between 10.54 am and 7.19 pm ? **(1)**

7. Measure the line AB to the nearest mm. **(1)**

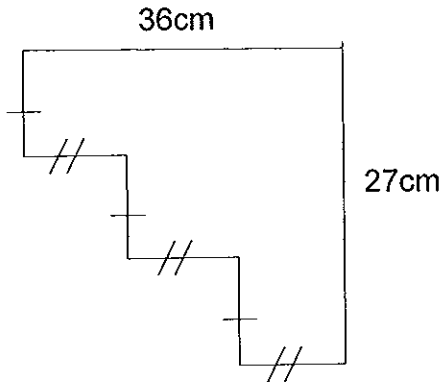
A _____ B

8. If an open box was made by folding along the dotted lines, what would the volume be ? **(2)**



NOT TO SCALE

9. Find the **perimeter and area** of the following shape. (4)



NOT TO SCALE

10. A rectangular paddock has dimensions 100 m and 250 m.

Find the cost of fencing the paddock if fencing is $7.50 per metre. (1)

11. A rectangular carpet square 3.5 m by 5 m is placed in the centre of a square floor with side length 7 m. What floor area is **not** covered by the carpet ? (2)

Name:_____

Teacher's Name:_____

12. A room has an area of 26 m^2 and is 5 m long. How wide is the room ? **(2)**

13. A container measures 0.9 m by 0.6 m by 0.5 m. Calculate how many boxes will fit in the container if each box occupies 0.01 m^3. **(2)**

END OF SECTION E

SECTION F: PROBLEM SOLVING (10 Marks)

Name:_____

Teacher's Name:_____

1. Twenty-seven one centimetre cubes are used to build a cube with side length 3 cm. The cube is then painted red. How many of the one-centimetre cubes will have only 2 faces painted ? **(2)**

2. Approximately 55 bricks are needed to build 1 square metre of wall. How many bricks would be needed to build a wall 17 m long and 2.7 m high if the wall has two windows, each 2.3 m long and 1.2 m high ? **(2)**

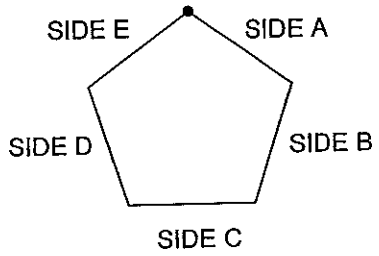
3. A tin whose base is a rectangle 15 cm by 20 cm contains 3 litres of water. What is the depth of the water ? (1L = 1000 cm^3) **(2)**

Name:_____

Teacher's Name:_____

4. Farmer Bill put a square fence around his vegetable garden to keep the deer away from his vegetables. One side of the square is 10 m long. If the fence posts were 2 m apart, how many posts did Farmer Bill use ? (1)

5. Shane the snail crawled around a regular pentagon. He started at the dot. What side will he be on when he has crawled a distance of $\frac{13}{20}$? (1)



5. A one metre square sheet of cardboard is cut into the maximum number of squares of side one millimetre. If these squares could be laid side by side, how far would they stretch? (2)

END OF SECTION F

YEAR 8/9 TEST

SECTION A: NUMBER (20 Marks) 82%

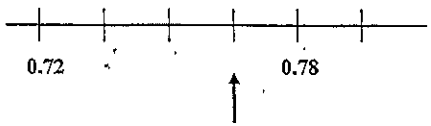
Name: Andrew

Teacher's Name:

QUESTIONS 1-10 (1 mark each)	ANSWER
1. Write $\frac{3}{8}$ as a decimal.	37.5 ✗ 0.375
2. Convert $8\frac{1}{4}$% to a fraction.	$\frac{33}{25}$ ✗ $\frac{33}{400}$
3. Write 10 203 in expanded form.	(10 000+200+3) ✓
4. Round 21.379 to the nearest tenth.	21.4 ✓
5. Express $\frac{18}{45}$ as a percentage.	40% ✓
6. Calculate $(-3)^2-(-4)^2$.	−7 ✓
7. Evaluate $\underbrace{2\times-3}_{-6}+\underbrace{12\div-4}_{-3}$	$-\frac{3}{2}$ or $-1\frac{1}{2}$ ✗ −9
8. $\frac{4}{5}$ is equivalent to $\frac{48}{}$	$\frac{48}{60}$ ✓
9. Find 15% of $2.40	36¢ ✓
10. Arrange in ascending order: 0.203, 0.23, 0.0203, 0.302	0.0203, 0.203, 0.23, 0.32 ✓

$\frac{16}{20}$

11.



0.765

What number is the arrow pointing to ? 76.5 ✗ (1)

12. True or false ? $\frac{3}{7} > \frac{2}{6}$ True ✓ (1)

Name:

Teacher's Name:

13. Evaluate: $1\frac{1}{3}-\frac{6}{11}$ (1)

$1\frac{1}{3}-\frac{6}{11}$ = =

$=\frac{4}{3}-\frac{6}{11}$

$=\frac{44}{33}-\frac{18}{33}$

$=\frac{26}{33}$ ✓

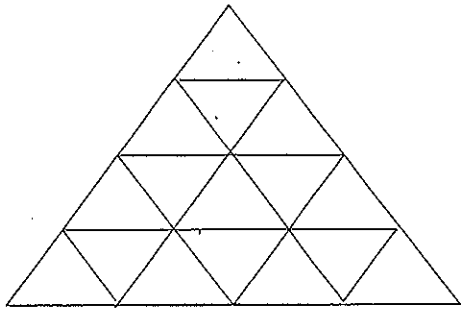
14. Evaluate: $\frac{8}{5}\times\frac{5}{8}$ (1)

$\frac{8}{5}\times\frac{5}{8}$

$=\frac{40}{40}$ ✓

$=1$

15. What fraction of the diagram is shaded ? $\frac{0}{16}$ ✓ (1)



16. Insert brackets to make this statement true. (1)

$(9 \div 3 + 4) \times 7 = 49$ ✓

17. A tin of fishcake mix contains 240g of salmon, 156g of potato, 24g of seasoning and 16g of cornflour. Find the percentage by weight of salmon. (1)

55% ✓

$\frac{240 \div 2}{436 \div 2}$ $\frac{120}{218}$

240
156
24
16
436

$\frac{240}{436}$ $\frac{60}{109}$

240
24
156
16

$\frac{280}{156}$
436

$\frac{24000}{436}$

Name:_____

Teacher's Name:_____

18. Mark bought a barrel containing 30 L of orange juice.
If he drank $1\frac{1}{4}$ L every day, how long will the barrel last ? (1)

24 days ✓

$1\frac{1}{4}L \times 4 = 5$

$5\overline{)30}$ 6 ~~6×5=2~~ $6 \times 4 = 24$

19. Matthew receives \$36 per 1 000 newspapers he delivers, how much will he receive if he delivers 2 500 newspapers ? (1)

72
18
\$90 ✓

20. A tank when $\frac{3}{4}$ full contains 81 litres. What is the capacity of the tank ? (1)

$\frac{3}{4} = 81L$

$\frac{1}{4} = 27L$ ✓

$\frac{4}{4} = 108L$ ✓

END OF SECTION A

SECTION B: ALGEBRA (20 Marks)

Name:_____

Teacher's Name:_____

$\frac{12}{20}$

1. Simplify: $4a - 2ab + 3a$ (1)

$7a - 2ab$ ✓

2. Evaluate: $(3x^4)^2$ $= 3x^4 \times 3x^4 = 9x^8$ (1)

$3x \times 3x \times 3x \times 3x = 81x^2$ ✗

Have you not learnt "Index laws"?

3. Simplify: $d^2e \times 2d^3e$ $\rightarrow 2d^5e^2$ (1)

$d \times d \times e \times 8d \times e$

4. Expand and simplify: $3(2-a)-(a+4)$ (2)

$6 - 3a - a + 4$ $\rightarrow$ $6 + 4 - 2a$ $\rightarrow$ $2 - 4a$

$6 - 2a + 4$ $\quad$ $10 - 2a$ ✗

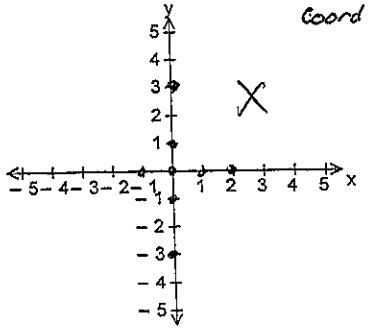
5. Complete the table of values using the given rule and then plot the points. (4)

$y = 2x - 1$

x	-1	0	1	2
y	-3	-1	1	3

✓

Coord. geometry!



✗

6. If $a = \frac{1}{2}$ $b = -5$ and $c = 4$ find the value of $\frac{ab}{c}$, as a fraction. (1)

$\frac{a \times b}{c}$

$\frac{\frac{1}{2} \times -5}{4} = \frac{-2.5}{4} = \cancel{-6.25}$

$-\frac{5}{2} \div \frac{4}{1} = -\frac{5}{2} \times \frac{1}{4}$

$= -\frac{5}{8}$

7. Tony has y marbles. His friend Lyn has 5 marbles less than he has.
How many marbles are there altogether ? (2)

Tony = y
Lyn = y − 5 ✓
Lyn + Tony = 2y − 5

8. Find the rule: (2)

m	2	4	6	8
t	-6	-8	-10	-12

t = [ ] m − [ ] 4 ✓

9. Solve: $3x-2=13$ (1)

3x − 2 = 13
3x = 13 + 2
x = 5 ✓

10. If the first odd number in a pattern is n, what are the next two consecutive even numbers ? (2)

odd
n + 1 and n + 3 ✓

11. A number is multiplied by four and then three is added. The answer is twenty seven.
Write an equation and then solve it to find the number. (3)

(x × 4) + 3 = 27 ✓
(4x) + 3 = 27
(4x) = 27 − 3
(4x) = 24 ✓
4(4x)/4 = 24/4 ✓
x = 6

END OF SECTION B

SECTION C: PROBLEM SOLVING (10 Marks)

Name: _____

Teacher's Name: _____

1. Linda is five times as old as her daughter Mia. Together their ages add up to 36 years.
How old are Linda **and** Mia ? (1)

Mia = 6 ✓ Linda = 30 ✓

10/10

2. How many numerals less than 100 contain the digit 5 ? (1)

5 50 55 65
15 51 56 75
25 52 57 85
35 53 58 95
45 54 59

19 ✓

3. A can with 30 marbles weighed 120 grams. The same can with 15 marbles weighed 95 grams. What is the weight of the can ? (2)

30 marbles = 190
2 × 15 marbles = 95 grams
30 marbles = 120 grams ✓

30 marbles = 190 g ✓
30 marbles = 120 g ✓
Container = 70 g ✓

4. The hare challenges the tortoise to a race. The hare can travel 10 m for eve.. 1m travelled by the tortoise. If they continue to travel at this rate, by how far will the hare beat the tortoise by if the race is over 100 m ? 90 metres (2)

10 m / 1 m

Tortoise	Hare
1 metre	10 metre ... ✓
100 metres	100 metres

100 − 10 ✓ = 90 m

5. A container when half full holds 3.6 L. How much more fluid is needed to make it $\frac{2}{3}$ full ? 4.8L (2)

$\frac{1}{2} = 3.6L$ $\frac{1}{2} = \frac{3}{3}$ $\frac{3}{6}$ $\frac{4}{6}$

$\frac{2}{3} = ?$ $3.6L = ?$

$1 = 7.2$ $14.4 \div 3$

4.8L ✓

6. How many different ways can the letters B, H, T and M be arranged so that the T is the 3rd or 4th letter ? 12 ✓ (2)

2	1	1	3	= 6
3	2	1	1	= 6

12

BHTM BHMT
BMTH BMHT
MBTH MBHT
MHTB MHBT
HBTM HBMT
HMTB HMBT

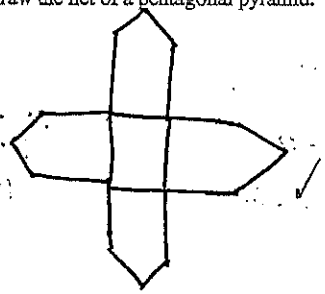
END OF SECTION C

SECTION D: GEOMETRY (20 Marks) Name:_____

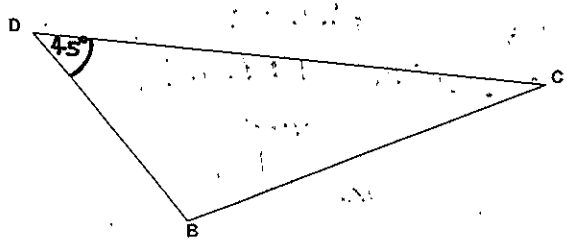
Teacher's Name:_____

17/20

1. Draw the net of a pentagonal pyramid. (1)

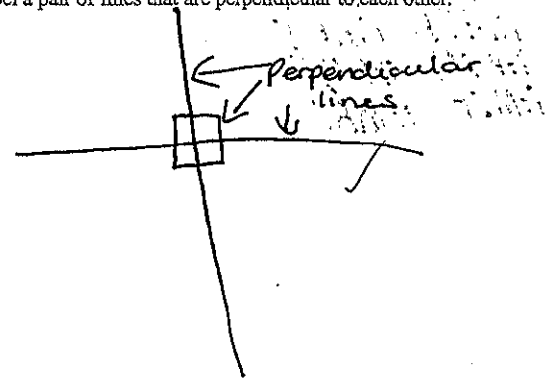


2. Use a protractor to measure the size of $\angle DCB$ shown in the diagram. (1)



$\angle DCB = 27^\circ$ ✓

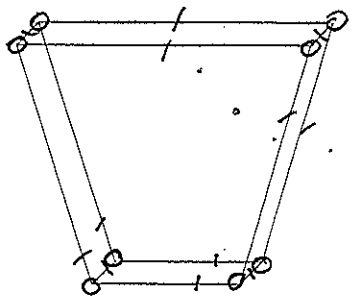
3. Draw and label a pair of lines that are perpendicular to each other. (1)



Name:_____

Teacher's Name:_____

4. How many faces, edges and vertices does the following shape have? (3)

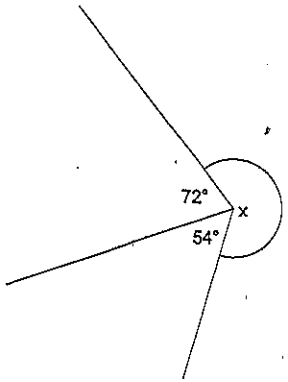


Faces 6 ✓

Edges 12 ✓

Vertices 8 ✓

5. Find the value of x, giving reasons (2)

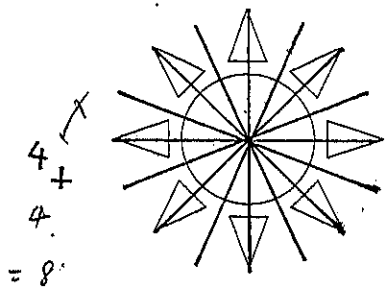


360°
126°
234 ✓

x = 234 ✓

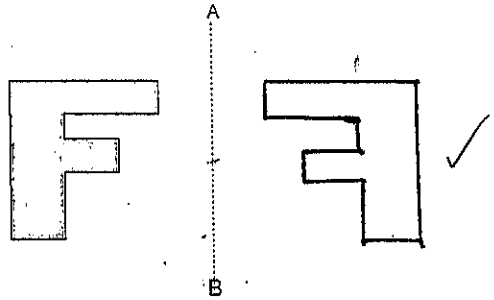
Reason The two angles 72° and 54° are portions of the ∠ x and since ∠ x is a revolution i.e 360° − 72° + 54°
= 360° − 126°
= 234

6. Draw ALL the axes of symmetry on the following shape. (2)



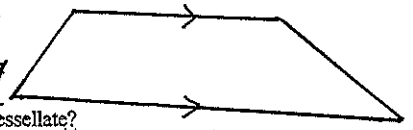
4 + 4 = 8

7. Reflect the F about the line AB (1)



8. Write a property of a trapezium (you may use a diagram to help you). (1)

a trapezium only has one ~~Symmetry~~ pair of parallel sides



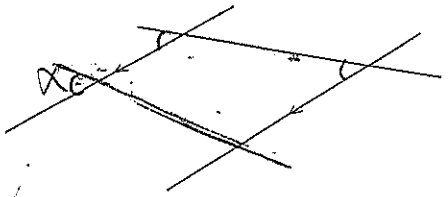
9. Can the following shape tessellate? (1)

yes ✓

Name:_____

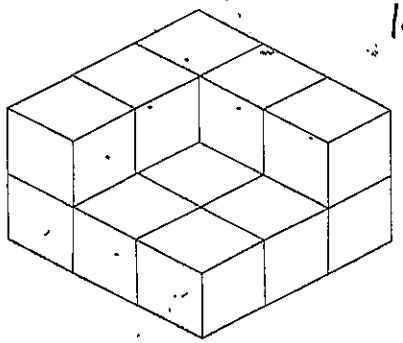
Teacher's Name:_____

10. Draw and label a pair of corresponding angles. (1)

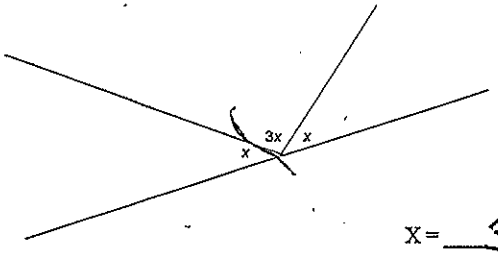


11. How many cubes make up the following diagram? (1)

14 ✓



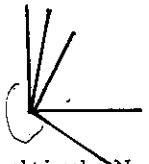
12. Find the value of x (2)



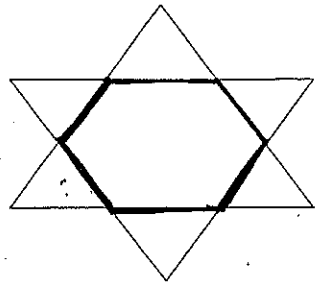
X = 36° ✓

13. What is the obtuse angle between the hour and minute hand at 4 o'clock? (1)

240° ✓

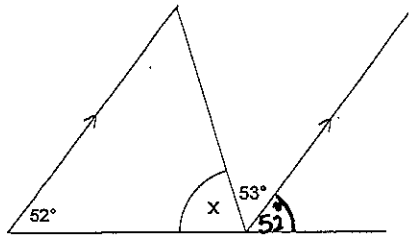


14. The Star of David consists of two equilateral triangles. Name another shape in the Star. (1)



hexagon ✓

15. Find the value of x. (1)



180
105
75

x = 75° ✓

END OF SECTION D

SECTION E: MEASUREMENT (20 Marks)

Name: Peter

Teacher's Name: Andrew Tayeh

QUESTIONS 1-5 (1 mark each)	ANSWER
1. Convert 23 mm to m.	0.023 ✓
2. Convert 2 hours to seconds.	7200 ✓
3. Convert 42.7 km to m.	42700 ✓
4. Convert 3.2 L to mL.	3200 ✓
5. Convert 150 g to kg	0.15 ✓

19/20

6. What is the time difference between 10.54 am and 7.19 pm ? (1)

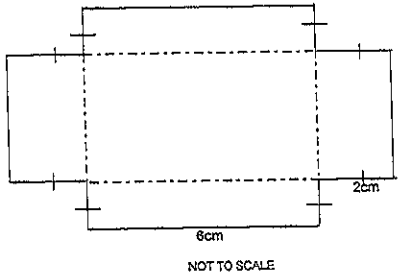
8 hours and 25 ~~MINS~~

7. Measure the line AB to the nearest mm. (1)

A ——— B

68 mm ✓

8. If an open box was made by folding along the dotted lines, what would the volume be ? (2)



48 cm³ = 48 mL ✓

42700

1.06
7.19

10 mm = 1 cm 100 cm = 1 m

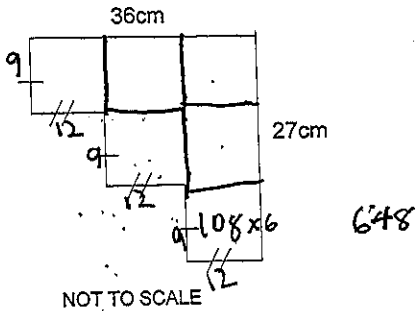
1000

120
7200

3200

0.15

9. Find the perimeter and area of the following shape. (4)



108 x 6 = 648

Perimeter = 126 cm ✓

Area = 648 cm² ✓

27
36
63 x
2
126

10. A rectangular paddock has dimensions 100 m and 250 m.
Find the cost of fencing the paddock if fencing is $7.50 per metre. (1)

$1875.00 ✗ 2(100+250) × $7.50 = $5250

11. A rectangular carpet square 3.5 m by 5 m is placed in the centre of a square floor with side length 7 m. What floor area is not covered by the carpet ? (2)

31.5 m² ✓

Name:_____

Teacher's Name:_____

12. A room has an area of 26 m^2 and is 5 m long. How wide is the room ? (2)

5.2m ✓

13. A container measures 0.9 m by 0.6 m by 0.5 m. Calculate how many boxes will fit in the container if each box occupies 0.01 m^3. (2)

27

$\frac{0.9 \times 0.6 \times 0.5\ m}{0.01\ m^3}$ ✓ = 27 ✓

END OF SECTION E

SECTION F: PROBLEM SOLVING (10 Marks)

Name:_____

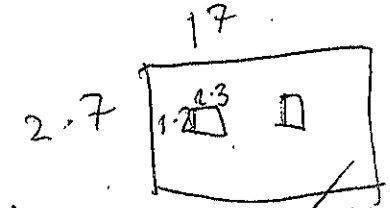
Teacher's Name:_____

1. Twenty-seven one centimetre cubes are used to build a cube with side length 3 cm. The cube is then painted red. How many of the one-centimetre cubes will have only 2 faces painted ? (2)

12 ✓

8/10

2. Approximately 55 bricks are needed to build 1 square metre of wall. How many bricks would be needed to build a wall 17 m long and 2.7 m high if the wall has two windows, each 2.3 m long and 1.2 m high ? (2)



$(2.7 \times 17) - (1.2 \times 2.3 \times 2)$ = 40.38 m^2

= 2220.9 bricks ≈ 2221 bricks

3. A tin whose base is a rectangle 15 cm by 20 cm contains 3 litres of water. What is the depth of the water ? (1L = 1000 cm^3) (2)

10 cm ✓

Name:_____

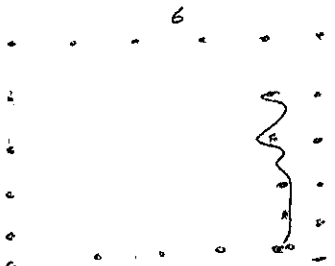
Teacher's Name:_____

4. Farmer Bill put a square fence around his vegetable garden to keep the deer away from his vegetables. One side of the square is 10 m long. If the fence posts were 2 m apart, how many posts did Farmer Bill use ? (1)

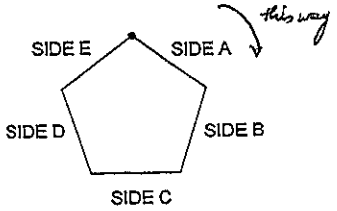
6 post X

6 x 4 - 4

= 20 posts



5. Shane the snail crawled around a regular pentagon. He started at the dot. What side will he be on when he has crawled a distance of $\frac{13}{20}$? $\frac{3}{5} = \frac{12}{20}$ (1)



Side D ✓

5. A one metre square sheet of cardboard is cut into the maximum number of squares of side one millimetre. If these squares could be laid side by side, how far would they stretch? (2)

1000mm ✓ = 1 km.

END OF SECTION F

4+4+4+4