SYDNEY TECHNICAL HIGH SCHOOL

MATHEMATICS

Year 7 Yearly

2013

Time Allowed: 70 minutes

Instructions:

- Write using blue or black pen.
- Attempt all questions.

Part A Measurement Length, Mass and Time	Part B Fractions and Percentages	Part C Decimals and Probability	Part D Shapes and Geometry	Part E Miscellaneous	Total
28 Marks	27 Marks	28 Marks	24 Marks	33 ~~34~~ Marks	(40 ~~141~~

Part A Measurement, Length, Mass and Time — 28 Marks

1. Convert the following units to the given units (6)

(a) 3.5 m = _____ cm

(b) 2.3 km = _____ m

(c) 6250 mm = _____ m

(d) 32 mm = _____ cm

(e) 2 750 000 mm = _____ km

(f) 0.27 km = _____ m

2. Complete the following using sensible units: (4)

a) Length of pen = 15 ____

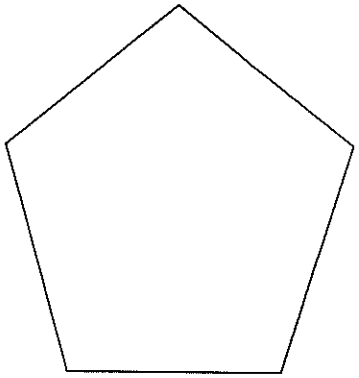
b) Height of door = 2 _____

c) Broken Hill to Adelaide = 500_____

d) Length of finger nail = 11_____

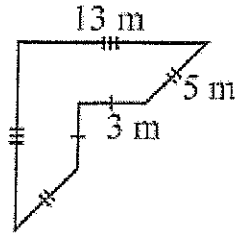
3. Measure the perimeter of this shape with your ruler, leaving your answer in cms. (1)

(a)

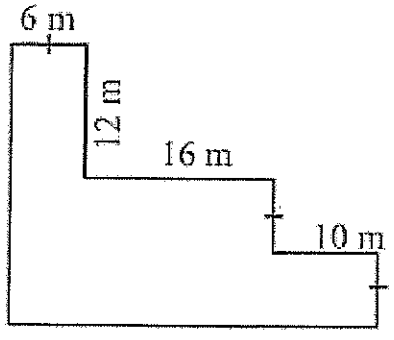


4. Find the perimeter of the following: (2)

(a)



(b)



5. List the months which have 30 days. (2)

6. Here is a local bus timetable: (3)

(a)How long is the bus ride from William St to City Centre?

(b)If the bus is 5 minutes late, what time will it arrive at the City Centre?

(c) Fiona catches a later bus, which travels the same route at the same speed. If it leaves Cummins St at 7:42, what time will it reach City Centre?

William St	4:39
Brazil St	4:48
Cummins St	5:02
Cummins Lane	5:17
McGowan St	5:22
Redwood Rd	5:29
City Centre	5:36

7. Express in 12 hour digital time: **21:19 hours** (1)

8. A timber worker cuts a log across its diameter into four pieces in 12 minutes. At this rate, how many minutes would it take him to cut another log of the same diameter into 6 pieces?

(2)

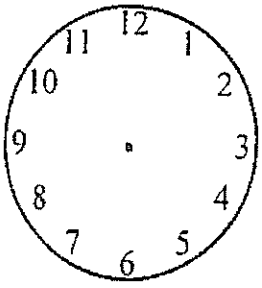
9. In winter in Australia, the Eastern time zone (EST) is a half an hour ahead of the Central time zone (CST) which is one and a half hours ahead of the Western time zone (WST). If it is 3 p.m. in Sydney (EST), what time is it in:

(a) Broken Hill (CST)

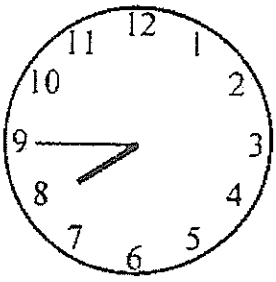
(b) Perth (WST)

(2)

10. Draw "twenty to seven" in the clock face below. (1)

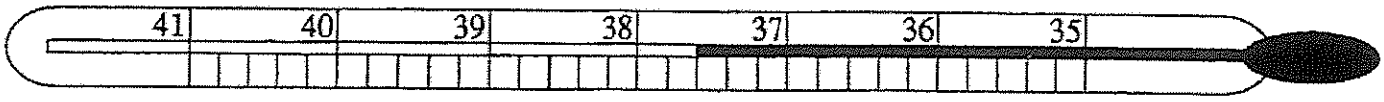


11. Write the time shown in the clock face below in digital form. Assume it is evening. (1)



12. A jar of vitamin pills contains 35 pills at 7g each. If the jar itself weighs 83g, find the total weight of the pills and jar. (2)

13. (1)



The temperature shown on the thermometer is

(A) 37·3° (B) 37·6° (C) 38·2° (D) 38·4°

Part B Fractions and Percentages

27 Marks

(1) Write as an improper fraction

$3\frac{1}{7} =$

(1)

(2) Simplify

$\frac{47}{10} = \frac{\quad}{100}$

(1)

(3) Change to a mixed numeral

$\frac{15}{2} =$

(1)

(4) Evaluate

$\frac{2}{3} + \frac{1}{9}$

(1)

(5) Evaluate

$1\frac{1}{4} - \frac{3}{4}$

(1)

(6) Simplify

$\frac{7}{10} - \frac{3}{5} =$

(1)

(7)

$2\frac{5}{8} \times 3\frac{1}{3} \div 5 =$

(2)

(8)

$3\frac{3}{5} + 2\frac{2}{7} =$

(2)

(9)

The lowest common denominator of 3, 4 and 8 is:

(1)

(10) John receives $\frac{3}{8}$, of an inheritance and James $\frac{1}{6}$, and Mary receives the remainder. What fraction does Mary receive?

(2)

(11) Find $\frac{3}{5}$ of \$7.55

(1)

(12)

Six thousandths more than 125.3904 is equal to

(1)

(13) There are 80 students in year 7, including 10 prefects. The prefects plus 10% of the rest of year 7 are to go to a conference.

How many go to the conference?

(2)

(14) Which fraction is the largest?

a) $\frac{2}{3}$ b) $\frac{13}{20}$

c) $\frac{3}{5}$ d) $\frac{31}{50}$

(1)

(15) At the Pacific Games 5000 people entered the main gate. Of these, 3500 went to see the swimming and 1500 went to see the gymnastics.

What percentage of people went to see the gymnastics?

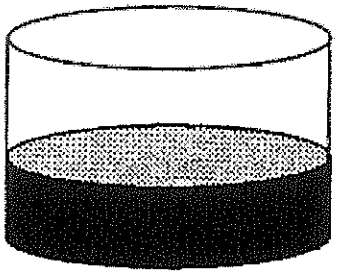
(2)

(16) Write 0.002 as a fraction in its simplest form.

(1)

(17)

When this tank is $\frac{2}{5}$ full there are 12 000 L in it.

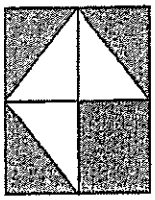


What is the total capacity of the tank?

(2)

(18)

This bathroom tile is black and white.



What fraction of the area is white?

(1)

(19) A quantity of cream contains

94.0 mL water
3.5 mL protein
97.2 mL fat
5.3 mL carbohydrate

What percentage of cream is water?

(2)

(20) What percentage is between $\frac{1}{3}$ and $\frac{2}{5}$?

(A) 25%

(B) 30%

(C) 35%

(D) 40%

(1)

Part C Decimals **28 Marks**

a) $12.61 \div 10$ (1)	(f) 2.8×0.4 (1)
b) $1764 \div 100$ (1)	(g) 4×0.03 (1)
c) $9.47 \div 100$ (1)	(h) 4.3×200 (1)
d) $0.0021 \div 10$ (1)	(i) 2.01×0.6 (1)
e) 3.4×2 (1)	(j) $(0.5)^2$ (1)
f) $48 \div 1.2$ (1)	g) $1.4 \div 2$ (1)
h) $3.05 \div 0.05$ (1)	i) $1.4 \div 0.2$ (1)

1. The following distances were recorded for the long jump at the school carnival.

Mary	2.12 m
Scott	2.07 m
Briana	1.98 m
Liam	2.116 m
Rhiannon	1.65 m

The student who jumped the furthest distance was:

(1)

2. The following table shows the exchange rate for the Australian dollar in three countries.

Country	$1 Australian Buys
United States dollar	72.2 cents
Japanese yen	79.41 yen
New Zealand dollar	$1.23

What would I receive if I exchanged $200 Australian for United States dollars?

(2)

3. Express $\frac{729}{100}$ in decimal form

(1)

4. What percentage is 200g of 1kg?

(1)

5. Find 45% of 600 mL

(1)

6. Write $3\frac{3}{4}$ % as a fraction and as a decimal

(2)

7. Which of these is the largest?

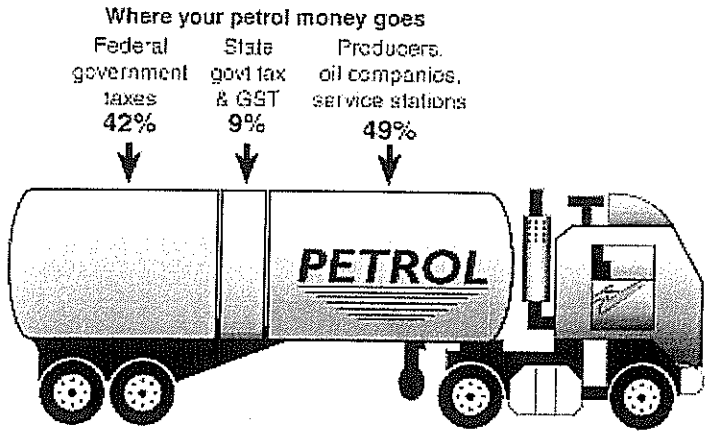
(A) 40% (B) 0.07 (C) $\frac{3}{5}$ (D) 0.5

(1)

8. Change $\frac{5}{8}$ to a percentage

(1)

9.



(a) What percentage of petrol goes to governments?

(1)

(b) If petrol costs 90 cents a litre, how much of this goes to the federal government in taxes?

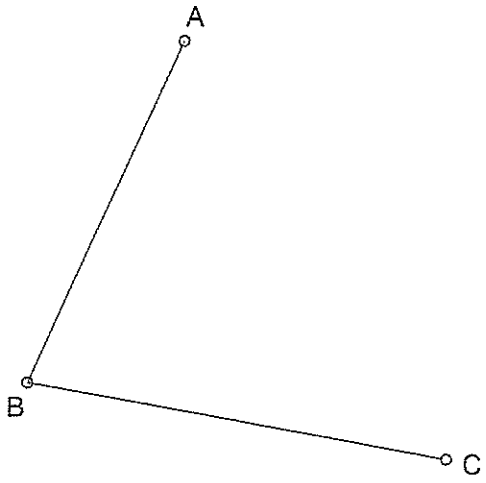
(2)

(c) If the percentages were left off the diagram, would it be an accurate way to represent the information?
Why or why not?

(1)

Part D Shapes and Geometry **24 Marks**

1. Use your protractor to measure the given angle



(1)

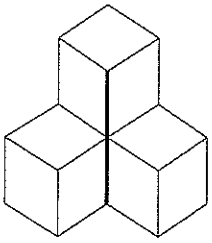
2. Draw a diagram to show that line segments AB, LZ and PQ are concurrent at X

(1)

3. Using your ruler draw a reflex angle and label it $\angle PQR$

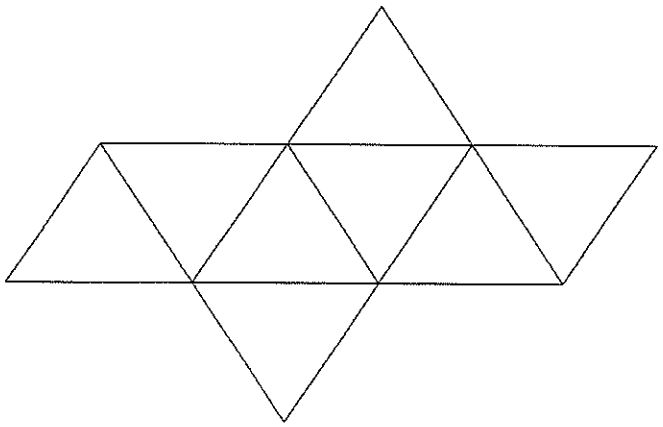
(1)

4. Redraw the following on isometric paper, using the darker edge as your starting line



(2)

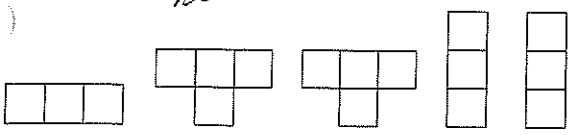
5. Name the solid below:



(1)

6. Draw the 3 dimensional object whose views are:

not correct



Top back front left right

(2)

7. Which of the following are regular polygons and why?

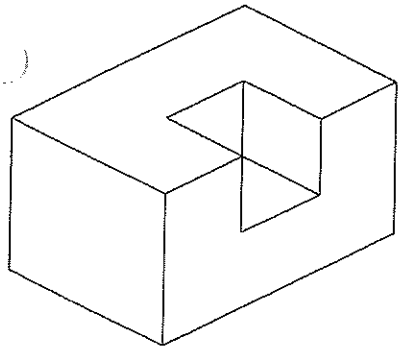
(a) Equilateral triangle?

(b) Square?

(c) Rhombus?

(3)

8. How many faces, vertices, and edges has the object below?



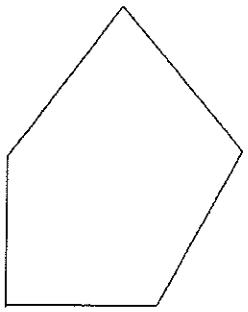
Faces_____

Vertices_____

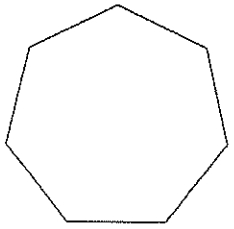
Edges_____ (3)

9. Find, without measuring, the sum of the interior angles of each of the polygons shown:

a.



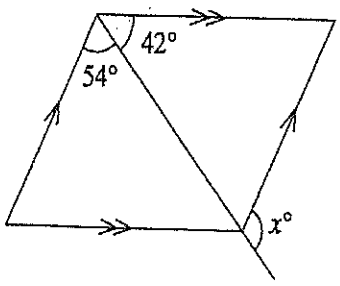
b.



(4)

The following questions are multiple choice: - **(1 mark each)**

10.



$x =$

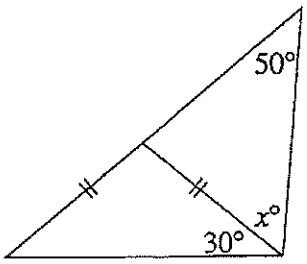
(A) 84

(B) 96

(C) 126

(D) 138

11.



NOT TO SCALE

The value of x is:

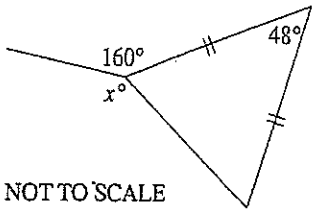
(A) 50

(B) 60

(C) 65

(D) 70

12.



NOT TO SCALE

The value of x is

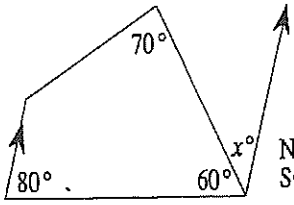
(A) 112

(B) 152

(C) 134

(D) 160

13.



NOT TO SCALE

The value of x is:

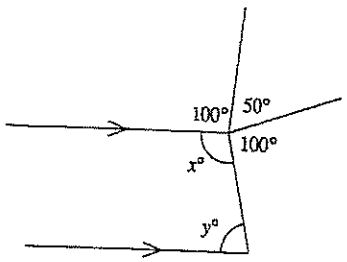
(A) 20

(B) 40

(C) 60

(D) 70

14.



Without drawing any further lines on the diagram, four students found the values of x and y, giving reasons. Only one student gave the correct reasons.

Which reasons are correct?

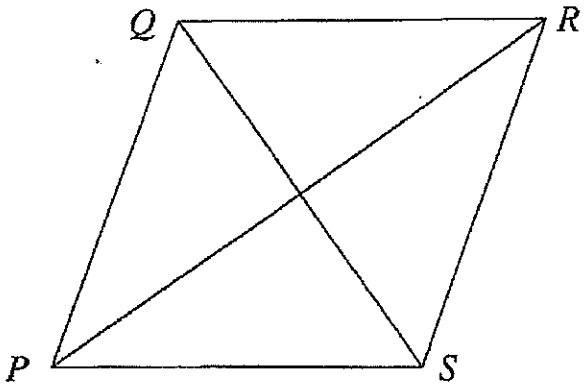
(A) $x =$ ..... (vertically opposite angles)
$y =$ . . . (cointerior angles and parallel lines)

(B) $x =$ . . . (angle sum at a point is 360^0)
$y =$ . . . (cointerior angles and parallel lines)

(C) $x =$. ..(vertically opposite angles)
$y =$ .. (corresponding angles and parallel lines)

(D) $x =$ . . . (angle sum at a point is 360^0)
$y =$ . . .(corresponding angles and parallel lines)

15.



PQRS is a parallelogram.

Which statement must be true?

(A) $QR = RS$

(B) $PR = QS$

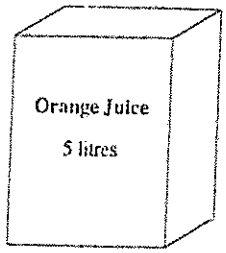
(C) $\angle QPR = \angle RPS$

(D) $\angle PQR = \angle PSR$

Part E Miscellaneous

34 Marks

1. How many 250 mL glasses could be filled from this container?

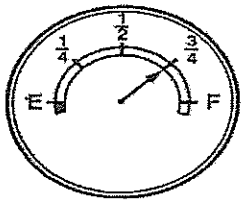


(1)

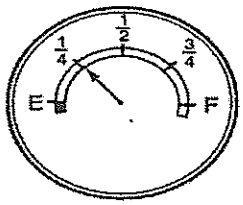
2. A sports car uses 17 L of petrol for each 100km travelled. Petrol costs 68cents per litre. Find the cost of the petrol for a 350 km trip.

(2)

3. The diagrams below shows the guage of a car before and after a trip. The car's tank holds 56 litres when full. How many litres were used on the trip?



Before



After

(1)

4. Tania is taping songs onto a 90 minute cassette tape. She has used $\frac{1}{10}$ of the tape for rock music and $\frac{1}{3}$ for rap music. How much time is left on her cassette?

(2)

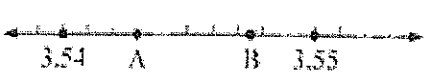
5. Which of these is the largest?

(A) 40% (B) 0.07 (C) $\frac{3}{5}$ (D) 0.5

already asked in Part C

(1)

6. What is the value of A and B on the following number line?



A =

B =

(2)

7. Find the value of the expression if n is replaced by 4:

(a) $\frac{6n}{3} =$

(b) $7 + 2n =$

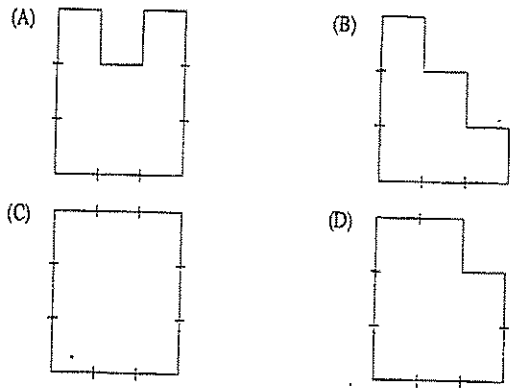
(2)

8. Write down the next two terms in the number pattern:

0.02, 0.035, 0.05,.....

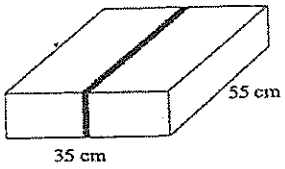
(2)

9. Which shape has the largest perimeter?



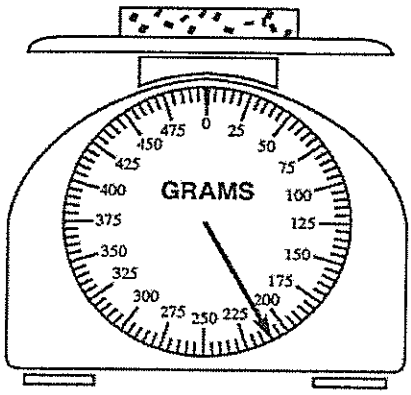
(1)

10. A piece of tape is wrapped around a box exactly once. The tape is 150cm long. How high is the box?



(1)

11. A package is placed on a set of scales. The needle shows the mass of the package.



A second package of mass 150g is placed on top of the first package. Draw accurately on the diagram the new position of the needle showing the total mass of both packages.

(1)

12. A digit is missing from the number below.

8.__69

When complete, the number can be written as 8.5 correct to 1 decimal place. What could the missing digit be?

(1)

13. When the largest of the numbers 0.062, 0.07, 0.009 is added to the smallest, the answer is?

(1)

14.

Discount for bulk posting	
Express Delivery	5% off
Regular Delivery	7% off

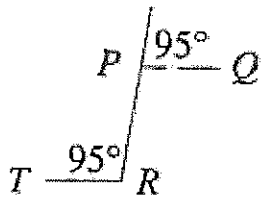
The cost of posting one letter is 45cents. A discount is given when many letter are posted at the same time.
Neil wants to post 200 letters using Express Delivery. He receives the discount for bulk postings.
What is the cost difference to Neil between paying for Express Delivery rather than regular Delivery?

(3)

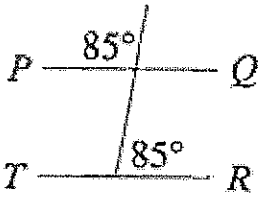
15. In which diagram is PQ parallel to TR?

NOT TO SCALE

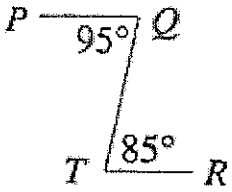
(A)



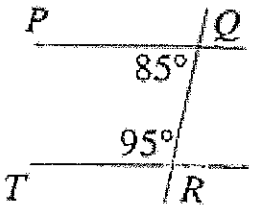
(B)



(C)



(D)



(1)

16. If $p = 3$ *and* $q = 2$ find the value of

(a) $p + q =$

(b) $\frac{5+p}{q}$

(c) $\frac{5p}{2q}$

(3)

17. How many terms are there in the following expressions?

a) $a + 2ab - 3b$

b) 2

c) $5x - 9$

(3)

18. Simplify each expression:

(a) $8m + 2m - 9m =$

(b) $8a - a + 2a$

(c) $9xy + 4yx$

(3)

19. Expand

(a) $y(y + 5)$

(b) $7(5y - 2) + 10y$

(3)

SYDNEY TECHNICAL HIGH SCHOOL

MATHEMATICS

Year 7 Yearly

2013

Time Allowed: 70 minutes

Instructions:

- Write using blue or black pen.
- Attempt all questions.

Part A Measurement Length, Mass and Time	Part B Fractions and Percentages	Part C Decimals and Probability	Part D Shapes and Geometry	Part E Miscellaneous	Total
28 Marks	27 Marks	28 Marks	24 Marks	~~34~~ 33 Marks	~~141~~ 140

Part A Measurement, Length, Mass and Time — 28 Marks

1. Convert the following units to the given units (6)

(a) 3.5 m = 350 cm

(b) 2.3 km = 2300 m

(c) 6250 mm = 6.25 m

(d) 32 mm = 3.2 cm

(e) 2 750 000 mm = 2.75 km

(f) 0.27 km = 270 m

2. Complete the following using sensible units: (4)

a) Length of pen = 15 cm

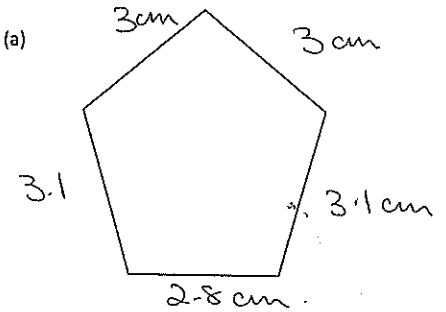
b) Height of door = 2 m

c) Broken Hill to Adelaide = 500 km

d) Length of finger nail = 11 mm

3. Measure the perimeter of this shape with your ruler, leaving your answer in cms. (1)

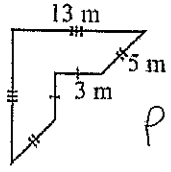
(a)



15cm.

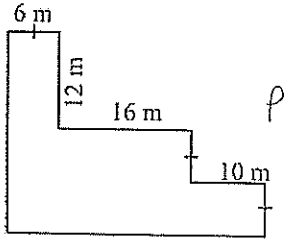
4. Find the perimeter of the following: (2)

(a)



P = 13+13+10+6
= ~~52m~~ 42m

(b)



P = 56+24+26
= ~~106m~~ 112m

5. List the months which have 30 days. (2)

September, April, June & November.

6. Here is a bus timetable: (3)

William St	4:39
Brazil St	4:48
Cummins St	5:02
Cummins Lane	5:17
McGowan St	5:22
Redwood Rd	5:29
City Centre	5:36

(a)How long is the bus ride from William St to City Centre?

57mins

(b)If the bus is 5 minutes late, what time will it arrive at the City Centre?

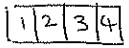
5-41

(c) Fiona catches a later bus, which travels the same route at the same speed. If it leaves Cummins St at 7:42, what time will it reach City Centre?

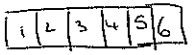
~~8-01~~ 8:16

7. Express in 12 hour digital time: **21:19 hours** 9-19 pm. (1)

8. A timber worker cuts a log across its diameter into four pieces in 12 minutes. At this rate, how many minutes would it take him to cut another log of the same diameter into 6 pieces?



3 cuts = 12 mins
1 cut = 4 mins



5 cuts = 20 mins

(2)

9. In winter in Australia, the Eastern time zone (EST) is a half an hour ahead of the Central time zone (CST) which is one and a half hours ahead of the Western time zone (WST). If it is 3 p.m. in Sydney (EST), what time is it in:

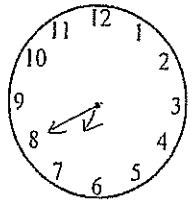
(a) Broken Hill (CST) 2-30pm

(b) Perth (WST) ~~1-30pm~~.

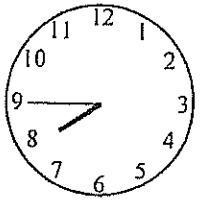
1 pm

(2)

10. Draw "twenty to seven" on the clock face below. (1)



11. Write the time shown in the clock face below in digital form. Assume it is evening. (1)



7-45 pm.

12. A jar of vitamin pills contains 35 pills at 7g each. If the jar itself weighs 83g, find the total weight of the pills and jar. (2)

35
7
245
83
328g.

328g.

0.328kg.

13. (1)

The temperature shown on the thermometer is

(A) 37·3° (B) 37·6° (C) 38·2° (D) 38·4°

B

Part B Fractions and Percentages

27 Marks

(1) Write as an improper fraction

$3\frac{1}{7} =$ 22/7

(1)

(2) Simplify

$\frac{47}{10} = \frac{470}{100}$

(1)

(3) Change to a mixed numeral

$\frac{15}{2} =$ $7\frac{1}{2}$

(1)

(4) Evaluate

$\frac{2}{3}+\frac{1}{9} = \frac{7}{9}$

(1)

(5) Evaluate

$1\frac{1}{4}-\frac{3}{4}$ 1/2

(1)

(6) Simplify

$\frac{7}{10}-\frac{3}{5} =$ 1/10

(1)

(7)

$2\frac{5}{8} \times 3\frac{1}{3} \div 5 =$

$\frac{21}{8} \times \frac{10}{3} \times \frac{1}{5} = \frac{7}{4}$

4

(2)

(8)

$3\frac{3}{5}+2\frac{2}{7} =$ $5\frac{31}{35}$

$\frac{18}{5}+\frac{16}{7} = \frac{206}{35} =$

(2)

(9)

The lowest common denominator of 3, 4 and 8 is:

24

(1)

(10) John receives $\frac{3}{8}$, of an inheritance and James $\frac{1}{6}$, and Mary receives the remainder. What fraction does Mary receive?

$\frac{3}{8}+\frac{1}{6} = \frac{9+4}{24} = 13/24$

Mary = 11/24

(2)

(11) Find $\frac{3}{5}$ of \$7.55

$\frac{3}{5} \times 7.55 = \$4.53$

(1)

(12)

Six thousandths more than 125.3904 is equal to

125.3904
+ .006
125.3964

(1)

(13) There are 80 students in year 7, including 10 prefects. The prefects plus 10% of the rest of year 7 are to go to a conference.

How many go to the conference?

7+10 = 17

(2)

(14) Which fraction is the largest?

a) $\frac{2}{3}$ b) $\frac{13}{20}$

c) $\frac{3}{5}$ d) $\frac{31}{50}$

A

(1)

(15) At the Pacific Coast 5000 people entered the main gate. Of these, 3500 went to see the swimming and 1500 went to see the gymnastics.

What percentage of people went to see the gymnastics?

$\frac{1500}{5000}$ = 30%

(2)

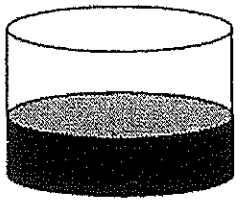
(16) Write 0.002 as a fraction in its simplest form.

$\frac{2}{1000} = \frac{1}{500}$

(1)

(17)

When this tank is $\frac{2}{5}$ full there are 12 000 L in it.



What is the total capacity of the tank?

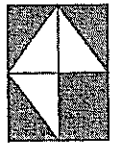
$\frac{2}{5}$ = 12,000 L

Full = 30,000 L

(2)

(18)

This bathroom tile is black and white.



What fraction of the area is white?

3/8

(1)

(19) A quantity of cream contains

94.0 mL water
3.5 mL protein
97.2 mL fat
5.3 mL carbohydrate
200

What percentage of cream is water?

$\frac{94}{200} = \frac{47}{100} = 47\%$

(2)

(20) What percentage is between $\frac{1}{3}$ and $\frac{2}{5}$?

(A) 25%

(B) 30%

(C) 35%

(D) 40%

C

(1)

Part C Decimals **28 Marks**

a) $12.61 \div 10$ (1) 1.261	(f) 2.8×0.4 1.12 (1)
b) $1764 \div 100$ (1) 17.64	(g) 4×0.03 0.12 (1)
c) $9.47 \div 100$ (1) 0.0947	(h) 4.3×200 860 (1)
d) $0.0021 \div 10$ 0.00021 (1)	(i) 2.01×0.6 1.206 (1)
e) 3.4×2 6.8 (1)	(j) $(0.5)^2$ 0.25 (1)
f) $48 \div 1.2$ 40 (1)	g) $1.4 \div 2$ 0.7 (1)
h) $3.05 \div 0.05$ 61 (1)	i) $1.4 \div 0.2$ 7 (1)

1. The following distances were recorded for the long jump at the school carnival.

Mary	2.12 m
Scott	2.07 m
Briana	1.98 m
Liam	2.116 m
Rhiannon	1.65 m

The student who jumped the furthest distance was: Mary (1)

2. The following table shows the exchange rate for the Australian dollar in three countries.

Country	$1 Australian Buys
United States dollar	72.2 cents
Japanese yen	79.41 yen
New Zealand dollar	$1.23

What would I receive if I exchanged $200 Australian for United States dollars?

$100 = $72.20 US

$200 - $144.40 US (2)

3. Express $\frac{729}{100}$ in decimal form

7.29 (1)

4. What percentage is 200g of 1kg?

20% (1)

5. Find 45% of 600 mL

270 (1)

6. Write $3\frac{3}{4}$% as a fraction and as a decimal

(a) $\frac{375}{10000} = \frac{3}{80}$ (b) 0.0375 (2)

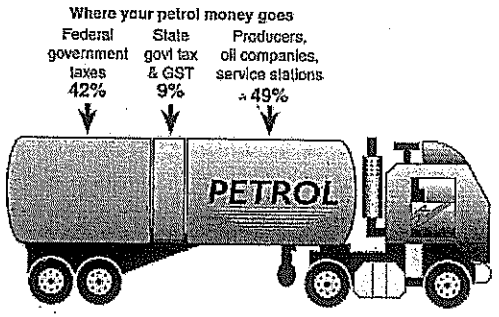
7. Which of these is the largest?

(A) 40% (B) 0.07 (C) $\frac{3}{5}$ (D) 0.5 (1)

8. Change $\frac{5}{8}$ to a percentage

62.5% (1)

9.



(a) What percentage of petrol goes to governments?

51% (1)

(b) If petrol costs 90 cents a litre, how much of this goes to the federal government in taxes?

0.378c

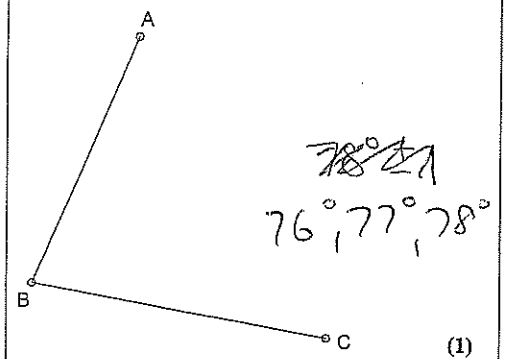
~~0.459c~~ (2)

(c) If the percentages were left off the diagram, would it be an accurate way to represent the information? Why or why not?

(1)

Part D Shape and Geometry **24 Marks**

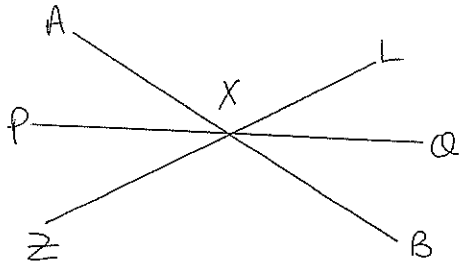
1. Use your protractor to measure the given angle



~~78°~~ 76°, 77°, 78°

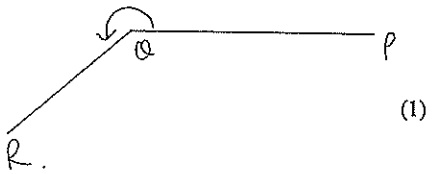
(1)

2. Draw a diagram to show that line segments AB, LZ and PQ are concurrent at X



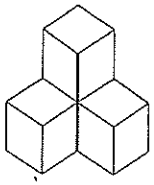
(1)

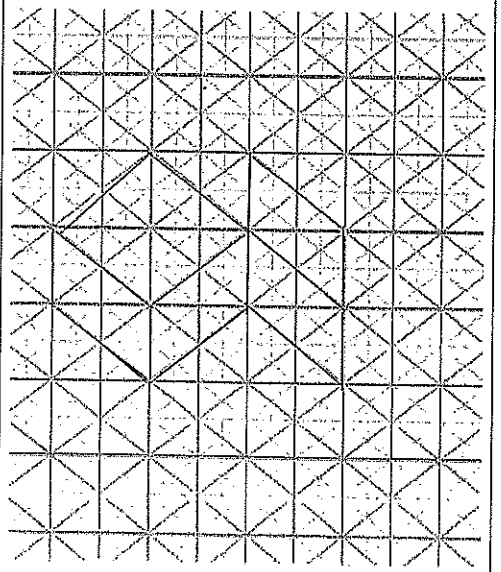
3. Using your ruler draw a reflex angle and label it $\angle PQR$



(1)

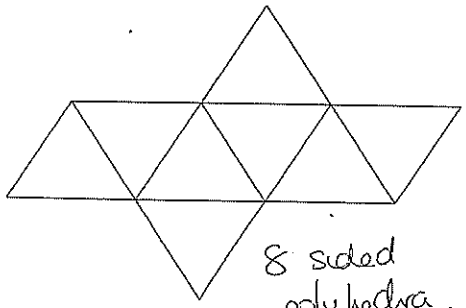
4. Redraw the following on isometric paper, using the darker edge as your starting line





(2)

5. Name the solid below:



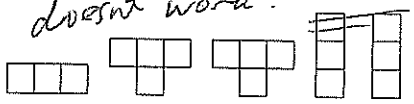
8 sided polyhedra.

octahedron.

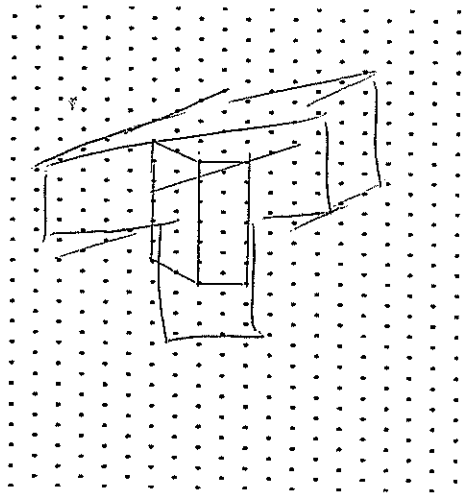
(1)

6. Draw the 3 dimens[illegible]l object whose views are:

doesn't work.



Top back front left right



(2)

7. Which of the following are reg[illegible] polygons and why?

(a) Equilateral triangle? Yes

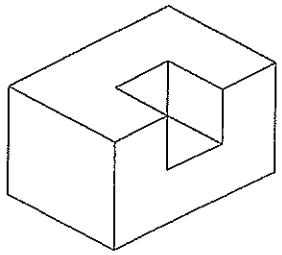
(b) Square? Yes

(c) Rhombus? – NO

angles not equal.

(3)

8. How many faces, vertices, and edges has the object below?



Faces 10

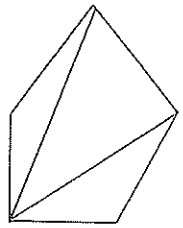
Vertices 16

Edges 24

(3)

9. Find, without measuring, the sum of the interior angles of each of the polygons shown:

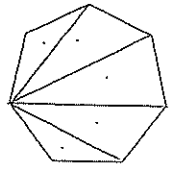
a.



180×3

540

b.



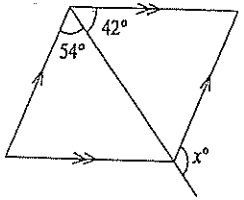
180×5

900

(4)

The followir uestions are multiple choice: - **(1 mark each)**

10.



$x =$

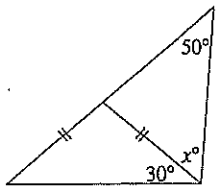
(A) 84

(B) 96

(C) 126

(D) 138

11.



NOT TO SCALE

The value of x is:

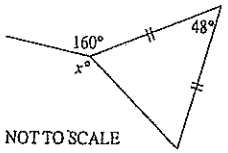
(A) 50

(B) 60

(C) 65

(D) 70

12.



NOT TO SCALE

The value of x is

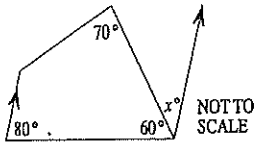
(A) 112

(B) 152

(C) 134

(D) 160

13.



NOT TO SCALE

The value of x is:

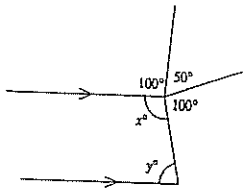
(A) 20

(B) 40

(C) 60

(D) 70

14.



NOT TO SCALE

Without drawing any further lines on the diagram, four students found the values of x and y, giving reasons. Only one student gave the correct reasons.

Which reasons are correct?

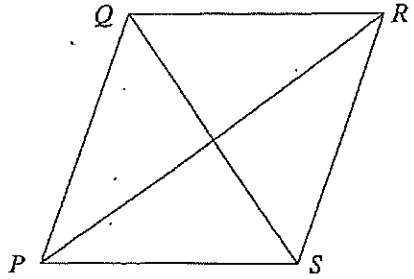
(A) x = ... (vertically opposite angles)
y = . . . (cointerior angles and parallel lines)

(B) x = . . . (angle sum at a point is 360^0)
y = . . . (cointerior angles and parallel lines)

(C) x =. ..(vertically opposite angles)
y = .. (corresponding angles and parallel lines)

(D) x = . . . (angle sum at a point is 360^0)
y = . . .(corresponding angles and parallel lines)

15.



PQRS is a parallelogram.

Which statement must be true?

(A) $QR = RS$

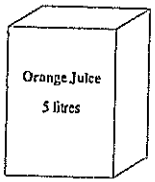
(B) $PR = QS$

(C) $\angle QPR = \angle RPS$

(D) $\angle PQR = \angle PSR$

Part E Miscellaneous **34 rks**

1.



How many 250 mL glasses could be filled from this container?

20

(1)

2. A sports car uses 17 L of petrol for each 100km travelled. Petrol costs 68cents per litre. Find the cost of the petrol for a 350 km trip.

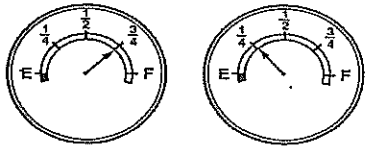
17 × 3.5 = 59.5

60 × 68 = 40.80 − 34 = 40.46

$40-46

(2)

3. The diagrams below shows the guage of a car before and after a trip.



The car's tank holds 56 litres when full. How many litres were used on the trip?

1/2 = 28 l

(1)

4. Tania is taping songs onto a 90 minute cassette tape. She has used $\frac{1}{10}$ of the tape for rock music and $\frac{1}{3}$ for rap music. How much time is left on her cassette?

Rock - 9 mins

Rap = 30 − 39 mins

51 mins

(2)

5. Which of these is the largest?

(A) 40% (B) 0.07 (C) $\frac{3}{5}$ (D) 0.5

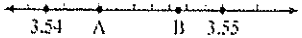
0.4 0.07 0.6 0.5

3/5

already asked in Part C

(1)

6. What is the value of A and B on the following number line?



A = 3.543

B = 3.5475

(2)

7. Find the value of the expression if n is replaced by 4:

(a) $\frac{6n}{3}$ = $\frac{24}{3}$ = 8

(b) $7 + 2n$ = 7 + 8 = 15

(2)

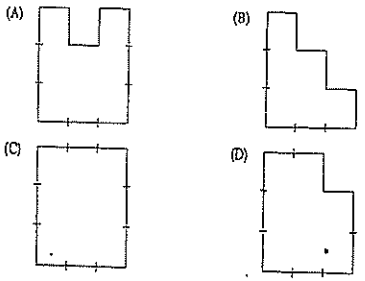
8. Write down the next two terms in the number pattern:

0.02, 0.035, 0.05, ...

0.015, 0.015

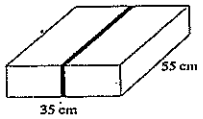
0.065, 0.080 (2)

9. Which shape has the largest perimeter?



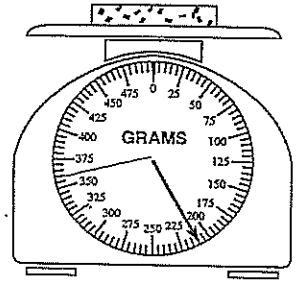
(1) A

10. A piece of tape is wrapped around a box exactly once. The tape is 150cm long. How high is the box?



20cm. (1)

11. A package is placed on a set of scales. The needle shows the mass of the package.



360 kg

A second package of mass 150g is placed on top of the first package. Draw accurately on the diagram the new position of the needle showing the total mass of both packages.

(1)

12. A digit is missing from the number below.

8.__69

When complete, the number can be written as 8.5 correct to 1 decimal place. What could the missing digit be?

4 (1)

13. When the largest of the numbers 0.062, 0.07, 0.009 is added to the smallest, the answer is?

0.07
0.009
= 0.079 (1)

14.

Discount for bulk posting	
Express Delivery	5% off
Regular Delivery	7% off

The cost of posting one letter is 45cents. A discount is given when many letter are posted at the same time.
Neil wants to post 200 letters using Express Delivery. He receives the discount for bulk postings.
What is the cost difference to Neil between paying for Express Delivery rather than regular Delivery?

Express = 200 × 0.45 − 5%
= $90 − 4.50
= $85.50

Reg = 200 × 0.45 − 7%
= 90 − 6.30
= $83.70

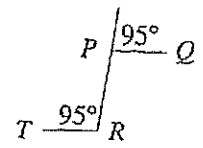
Difference = $1.80

(3)

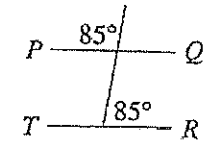
15. In which diagram is PQ parallel to TR?

NOT TO SCALE

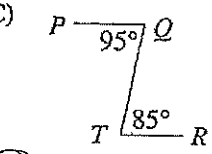
(A)



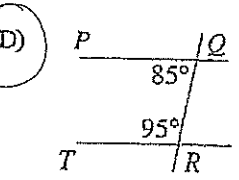
(B)



(C)



(D)



(1)

16. If $p = 3$ *and* $q = 2$ find the value of

(a) $p + q$ = 5

(b) $\frac{5+p}{q}$ = 4

(c) $\frac{5p}{2q}$ = $3\frac{3}{4}$ (3)

17. How many terms are there in the following expressions?

a) $a + 2ab - 3b$ 3

b) 2 1

c) $5x - 9$ 2.

(3)

18. Simplify each expression:

(a) $8m + 2m - 9m$ = m

(b) $8a - a + 2a$ 9a

(c) $9xy + 4yx$ 13xy.

(3)

19. Expand

(a) $y(y + 5)$ = $y^2 + 5y$

(b) $7(5y - 2) + 10y$

35y − 14 + 10y (3)

45y − 14