Name: ANSWERS Teacher:		Date:
Baldivis Secondary College	**Year 11 Mathematics** **Mini test** **Topic – Measurement** ***Full working out MUST be shown to get full marks for each question.***	/39
Total Time:	45 minutes	/39
Weighting:	10 %	
Equipment:	To be provided by the student: Pens and Pencils, scientific calculator, A4 page of notes (1 side).	

Question 1 ***5 marks***

Suggest an appropriate area unit for measuring:

a. the area of a postage stamp mm^2 or cm^2

b. the area of your desktop cm^2 or m^2

c. the area of your bedroom floor m^2

d. the area of Tasmania ha, km^2

e. the area of a toenail cm^2

1 a piece

Question 2 ***4 marks***

Fill in the missing numbers:

km	m	cm	mm
1.2	1200	120000	1200000
0.0024	2.4	240	2400
0.89	890	89000	890000
0.0019	1.9	190	1900

1 mark per row

$-\frac{1}{2}$ mark per error

Question 3 *2, 1, 1 marks*

Rugby league players aged 6-8 years old play on a field that is 68m long by 30m wide. During training, each player ran 7 laps around the outside of the field.

a) Calculate the distance the players ran in metres

Perimeter - distance around the outside

$2(68) + 2(30) = 196\text{ m}$ (1)

b) Convert your answer from part a to kilometres

$196 \times 7 = 1372\text{ m}$ (1)

$m \rightarrow km \quad \div 1000$

$\frac{1372}{1000} = 1.372\text{ km}$

c) Calculate the area of the field

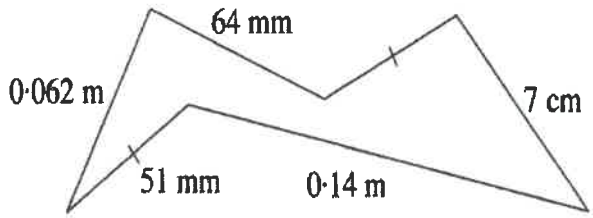
$\text{Area} = l \times w$

$68 \times 30 = 2040\text{ m}^2$ (1)

Question 4 *2,2 marks*

Find the perimeter of the following shapes:

a)



Convert to cm: (1)

0·062m = 6·2 cm

64mm = 6·4 cm

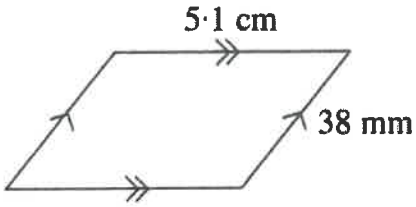
51 mm = 5·1 cm $\times 2$

0·14m = 14 cm

+ 7 cm

43·8 cm (1)

b)



38 mm = 3·8cm (1)

$2(5.1) + 2(3.8)$

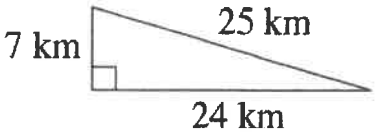
$= 17.8\text{cm}$ (1)

Question 5 *2 marks*

Find the area of the following shape expressing your answer using the units of:

i km^2

ii m^2



i) $\frac{1}{2} 24 \times 7 = 84 km^2$ ✓ km²

ii) $84 \times 1000^2 =$ ✓ conversion

$84000000\ m^2$

Question 6 *2 marks*

Mike purchased a 4.2 ha property. Council regulations allow him to have 5 free range chickens for every 100 m^2. How many free-range chickens is he allowed?

$1\ ha = 10000 m^2$

$4.2 ha = 42000\ m^2$ ✓ convert

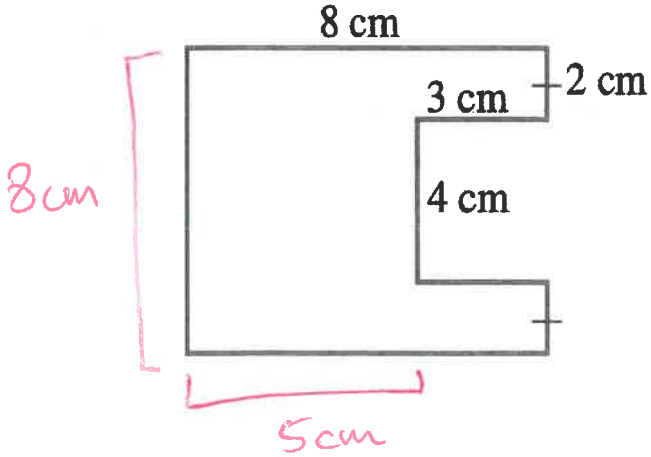
$\frac{42000}{100} = 420$ ✓ Pindle

$420 \times 5 = 2100$ chickens

✓ Ans

Question 7 *~~3~~ 2 marks*

Find the area of the following shape:



Total

$8 \times 8 = 64 cm^2$ $\frac{1}{2}$ work

Cutout

$3 \times 4 = 12\ cm^2$ $\frac{1}{2}$ work

$64 - 12 = 52 cm^2$ ✓ Ans

or

$5 \times 8 = 40 cm^2$

$40 + (2 \times 3 \times 2) = 52 cm^2$

Question 8 *2, 1 marks*

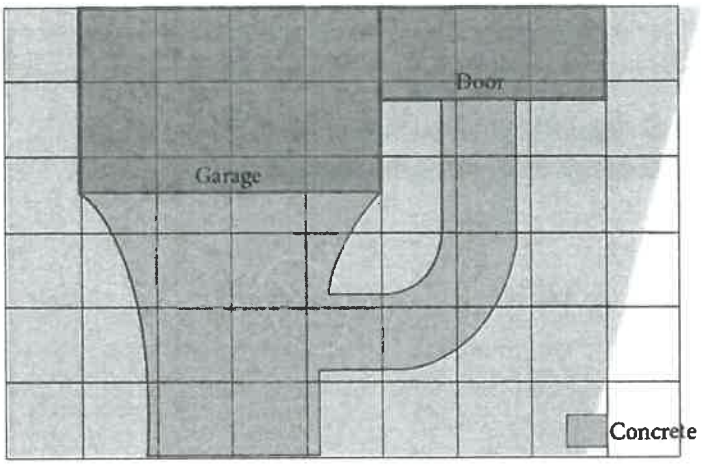
Jon is having the driveway and path at his new house covered with patterned concrete. The concrete company will charge $65 per square metre. Each square on the plan represents 1 m^2.

a. Estimate the area of the driveway and path.

≈15 sq ⇒ Estimate / 15 m^2 / m^2

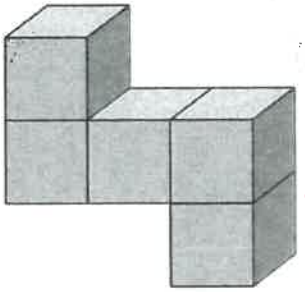
b. Approximately how much will the concrete company charge Jon?

$15 \times 65 = \$975$ / Ans.

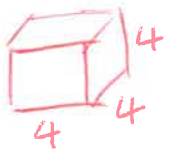


Question 9 *3 marks*

The solid below is made up of five cubes of side length 4 cm. What is the volume of the solid?



1 cube

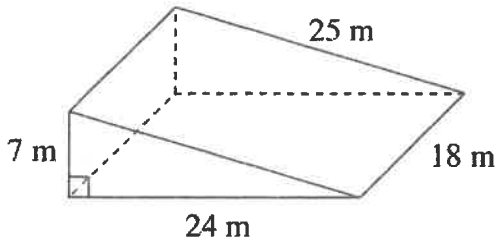


$Vol = 4^3 = 64\ cm^3$ (1) Volume

$64 \times 5 = 320\ cm^3$ (2) multiply (3) Ans

Question 10 *3 marks*

Find the volume of this triangular-based prism:



Volume = area × height

Area of △ = $\frac{1}{2}$ 24 × 7

= 84 m^2 ✓face Area

Volume = 84 × 18 ✓depth

= 1512 m^3 ✓Ans

Question 11 *2 marks*

Sam purchased 2 m^2 of material. She needs to cut it into rectangles of area 200 cm^2 for a patchwork quilt. This can be done with no waste. How many rectangles can Sam cut out?

$m^2 \rightarrow cm^2$

$\times 100^2$

$2\ m^2 = ?\ cm^2$

$= 2 \times 100^2$

$= 20000\ cm^2$ (1) cm^2 of plate

no. of rectangles = 20000 ÷ 200

= 100 (1) Ans.

Question 12 *1 marks*

The capacity of a car engine is quoted as 1800 cc, meaning 1800 cubic centimetres. Write this capacity in litres.

$1\ cm^3 = 1\ mL$

$1800\ cm^3 = 1800\ mL$

1800 ÷ 1000 = 1.8L ✓

1 L = 1000 mL

Question 13 *3 marks*

A shipment of wine is being sent to Europe in 1000 L tanks. Enough wine must be sent so 1000 dozen 750 mL bottles can be filled. How many tanks are needed?

1
12

12 000 bottles 750mL = 0.75L (1)

Qty of wine = 0.750 × 12000
= 9000 L (1)

no of tanks = $\frac{9000}{1000}$

= 9 tanks (1).

End of Assessment