

-1 missing & incorrect units



Mathematics Essentials 2015

Test 2

Task Weighting: 10%

Student Name: _____

Time Allowed: 50 Minutes

Total Marks: 42

Calculators and files are allowed in this test.

Answer all of the following questions. Show all working to maximise marks.

Question 1 [3 Marks: 1, 2]

(a) Which is the correct abbreviation for 25 centimetres?

25 cms or 25 cm (circle the correct answer) ✓

(b) Which unit, millimetre, centimetre, metre or kilometre, would you use to measure each of these lengths? Use the correct abbreviations for your answers.

i. The length of your calculator cm $\frac{1}{2}$
 ii. The width of a postage stamp mm $\frac{1}{2}$
 iii. The length of a cricket pitch m $\frac{1}{2}$
 iv. The distance from Kalgoorlie to Perth km $\frac{1}{2}$

Question 2 [9 marks: 1, 1, 1, 1, 1, 1, 1, 2]

Complete the missing sections.

a) 3 m = 300 cm ✓
 b) 5.35 km = 5350 m ✓
 c) 4000 m = 4 km ✓
 d) 23 cm = 230 mm ✓
 e) 360 sec = 6 min ✓
 f) 168 hr = 7 day ✓
 g) 2 cm² = 200 mm² ✓
 h) 30 km/hr = 500 m/min ✓

Question 3 [2 marks]

Katie is travelling to Esperance which is 450 km away. Katie is travelling in her car at 105 km/hr. How long will it take Katie to travel to Esperance? (show working)

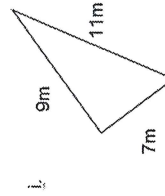
$$450 \div 105 = 4.3 \text{ hrs (round correctly)} \\ 4.29 \text{ hrs}$$

Question 4 [5 marks: 3, 5]

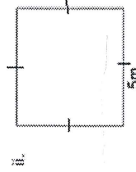
(a) Kylie has a 5 m long piece of lace which she is going to use to put around the outside of 4 handkerchiefs. She will need 120 cm for each handkerchief. How much lace will be left when Kylie is finished? (Show working)

$$500 \text{ cm} \quad 120 \times 4 = 480 \text{ cm} \\ 500 - 480 = 20 \text{ cm} \checkmark$$

(b) Calculate the perimeters of these shapes. (Show working)

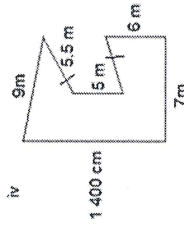


$$P = 9 + 7 + 11 \\ = 27 \text{ m} \checkmark$$



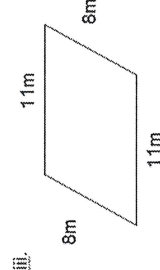
$$P = 5 \times 4 \\ = 20 \text{ m} \checkmark$$

iv



$$P = 14 + 9 + 11 + 5 + 6 + 7 \\ = 52 \text{ m} \checkmark$$

-1 per cent ✓
(10)



$$P = 22 + 16 \\ = 38 \text{ m} \checkmark$$

(12)

Question 5 [3 marks: 1, 2]

Joe wants to put new carpet in his bedroom. His bedroom is 4.5 m long and 3.2 m wide.

(a) Draw a diagram of Joe's bedroom floor with dimensions.

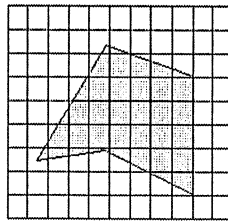


(b) How many square metres of carpet does Joe need to purchase in order to cover his bedroom? (show working)

$$A = 3.2 \times 4.5 \checkmark \\ = 14.4 \text{ m}^2 \checkmark$$

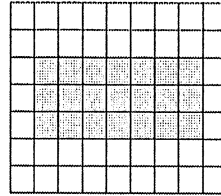
Question 6 [2 marks: 1, 1]

(a) Estimate the area of the following shape. Each square represents 1 unit².



$$\sim 26 \text{ units}^2 \checkmark \\ \sim 25-27 \text{ only} \quad \text{allow } \text{cm}^2$$

(b) Calculate the area of the following shape. Each square represents 1 unit².



$$20 \text{ units}^2 \checkmark$$

(5)

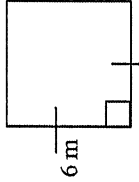
7 3

Question 7 [4 marks: 2, 2, 1]

Calculate the area of the following shapes:

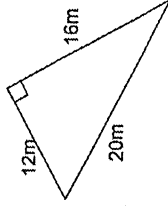
(Show working)

a)



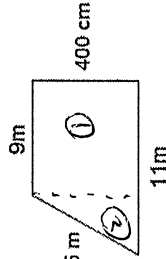
$$A = 6 \times 6 \checkmark \\ = 36 \text{ m}^2 \checkmark$$

b)



$$A = \frac{1}{2} \times 12 \times 16 \checkmark \\ = 96 \text{ m}^2 \checkmark$$

c)



$$A = 9 \times 4 = 36 \checkmark \\ A = 1 \times 4 = 4 \checkmark \\ \therefore A = 36 + 4 \\ = 40 \text{ m}^2 \checkmark$$

$$A = (9 + 1) \div 2 \times 4 \\ = 40 \text{ m}^2$$

OR.

Question 8 [4 marks: 2, 2]

a) John plays cricket. If John can bowl 6 balls in 5 minutes. How many balls can he bowl in 1/2 hour?

$$6 \times 6 = 36 \checkmark$$

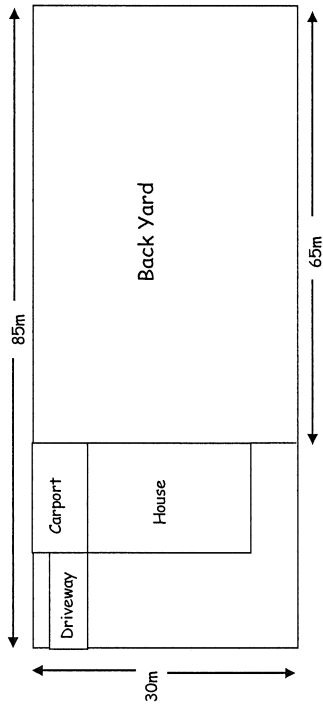
b) At Coles you have a choice of buying loose potatoes or a bag of potatoes. Loose potatoes cost \$2.30 /kg and a 3 kg bag of potatoes is \$7. Which is the better buy and explain how you reached your answer?

$$3 \times 2.30 = \$6.90 \checkmark \\ \therefore \text{Loose potatoes is better} \checkmark$$

(11)

Question 9 [7 marks: 2, 2, 3]

This is the position of Grant's house on his block of land.



- a) The block of land is 30 m wide and 85 m long. What is the area of the block of land?

$$A = 30 \times 85 \checkmark$$

$$= 2550 \text{ m}^2 \checkmark$$

- b) The land is valued at \$95 per square metre. Calculate the value of the block of land.

$$2550 \times 95 = \$242250 \checkmark$$

- c) The grass in the back yard needs fertilising. One bag of fertiliser covers 650 m^2 . Will one bag be enough for Grant's back yard?

Give a reason for your answer.

$$A = 65 \times 30$$

$$= 1950 \text{ m}^2 \checkmark$$

He will actually need 3 bags. \checkmark

No, $1950 \div 650 = 3 \checkmark$

END OF TEST