

NAME

YEAR 9
MARCH 2019
TEST

TIME ALLOWED: 1 DOUBLE LESSON

CALCULATORS ALLOWED

Section A – Mastery (31)

1. Solve the following equations:

a) $3(2x - 3) = 8$

[3]

b) $\frac{2x+5}{3} = 4$

[3]

a) $x =$ _____

b) $x =$ _____

2. Make x the subject of the following formulae:

i) $b = \sqrt{5x - 2}$ [3]

ii) $c = \frac{x}{a} - b$ [3]

i) $x =$ _____

ii) $x =$ _____

3. Simplify the following. You must show your working.

i) $\sqrt{72}$ [2]

ii) $\sqrt{72} - \sqrt{8}$ [2]

iii) $\frac{6}{\sqrt{2}}$ [2]

i) _____

ii) _____

iii) _____

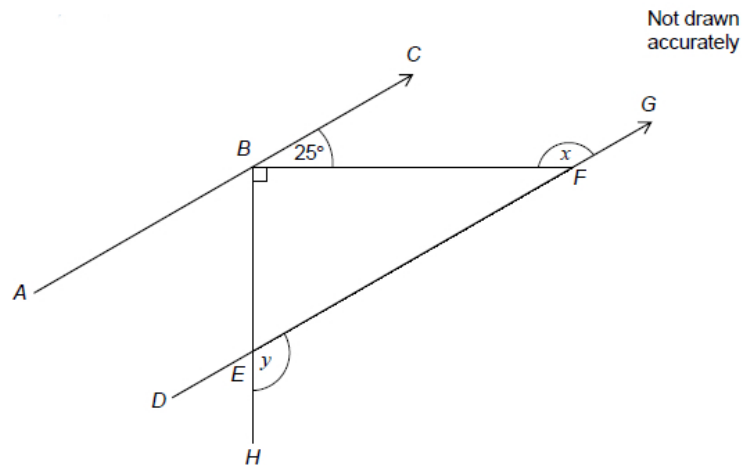
4. A gym has 275 members.
 40% are bronze members.
 28% are silver members.
 The rest are gold members.

Work out the number of gold members.

[3]

Answer _____

5. ABC and $DEFG$ are parallel lines.
 BEH is a straight line.



- (a) Work out the size of angle x .

[1]

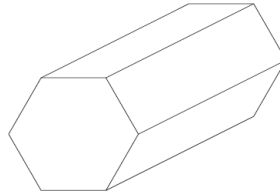
Answer _____ degrees

- (b) Work out the size of angle y .
 You **must** show your working, which may be on the diagram.

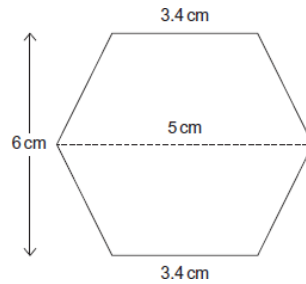
[2]

Answer _____ degrees

6. This box is in the shape of a prism.



(a) The cross section is two identical trapeziums joined together as shown.



Work out the area of the cross section.

Answer _____ cm^2

[3]

(b) The volume of the box is 360 cm^3
Work out the length of the box.

Answer _____ cm **[2]**

7. Calculate the size of the interior angle of a regular 15 sided polygon.

Answer _____ degrees **[2]**

Section B – GCSE 9-1 (28)

8. Pete is buying a house. His salary is £ 36 000.
The bank will lend him 3.5 times his salary for a mortgage.
This is 90% of the house price.
Work out the house price.

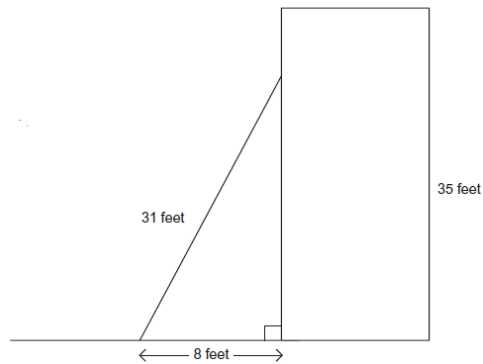
Answer £_____ [4]

9. Ali, Beth and Clare take a test.
The ratio of Ali's score to Beth's score is 5 : 3
Ali scored 10 more marks than Beth.
Clare scored 7 more marks than Ali.
Work out each of their scores.

Ali _____, Beth _____, Clare _____ [4]

9. A ladder of length 31 feet is leaning against a wall as shown.
The foot of the ladder is 8 feet from the wall.
The wall is 35 feet tall.

Not drawn accurately



Work out the distance from the top of the ladder to the top of the wall.

Answer _____ feet **[4]**

10.

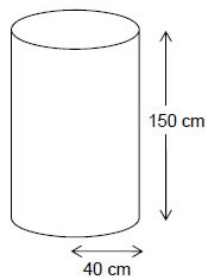
- a) Tom is standing 25m from Ripon cathedral.
The height from the ground to the top of the building is 28m.
What is the angle of elevation to the top of the building?

Answer _____ degrees **[3]**

- b) Tom now walks closer to the building and the angle of elevation increases to 64° . How far did he walk? Give your answer correct to 3 significant figures.

Answer _____ metres [4]

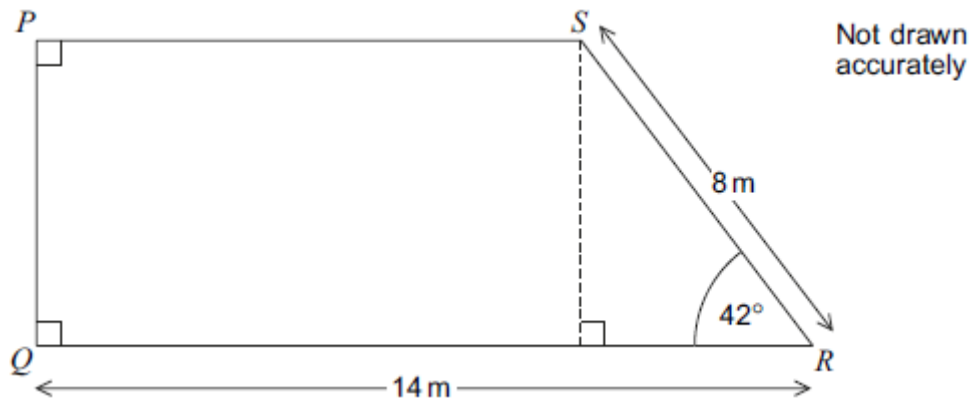
11. A water tank is a cylinder with radius 40 cm and depth 150 cm



It is filled at the rate of 0.2 litres per second.
1 litre = 1000 cm^3

Does it take longer than 1 hour to fill the tank?
You **must** show your working.

12. $PQRS$ is a trapezium.



Work out the perimeter of $PQRS$.

Perimeter _____ cm [5]