

Grade Grabber 10

40 Mark Paper

Question 1

(i) Find the Highest Common Factor of 63 and 105

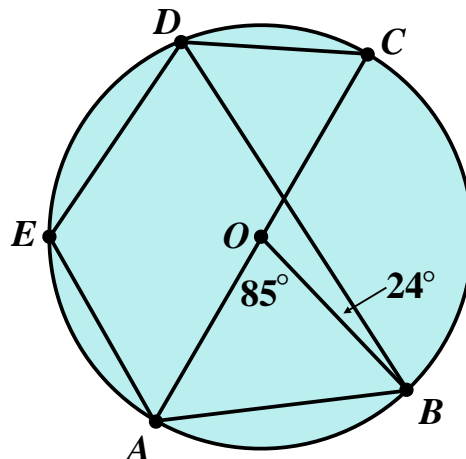
[1 mark]

(ii) Find the Lowest Common Multiple of 63 and 105

[1 mark]

Question 2

In the diagram, A, B, C, D and E are points on the circumference of a circle centre O .
 The line AOC is a diameter of the circle.
 Angle AOB is equal to 85° and angle DBO is equal to 24°



Find: (i) angle OAB

[2 marks]

(ii) angle BDC

[2 marks]

(iii) angle OCD

[2 marks]

(iv) angle AED

[2 marks]

Question 3

Solve these equations;

(i) $8x + 13 = 41$

[1 mark]

(ii) $4(5x - 7) = 2(7x + 4)$

[2 marks]

(iii) $x^2 - 11x + 24 = 0$

[2 marks]

Question 4

The perimeter of a triangle is 108 cm.

The lengths of its sides are in the ratio 2 : 3 : 4

Work out the size of the largest angle.

[4 marks]

Question 5

A coin is biased such that the probability of it landing heads is three times the probability of it landing tails.

The coin is tossed twice.

What is the probability that

(i) It lands "Heads" both times ?

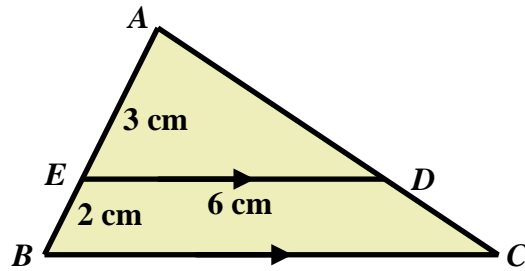
[2 marks]

(ii) It lands "Heads" exactly once ?

[3 marks]

Question 6

In the figure below, ED is parallel to BC .



(a) Calculate:

(i) the linear scale factor of the enlargement mapping triangle AED onto triangle ABC .

[1 mark]

(ii) the length of BC

[1 mark]

(b) If the area of triangle ABC is 20 cm^2 , what is the area of triangle AED ?

[3 marks]

Question 7

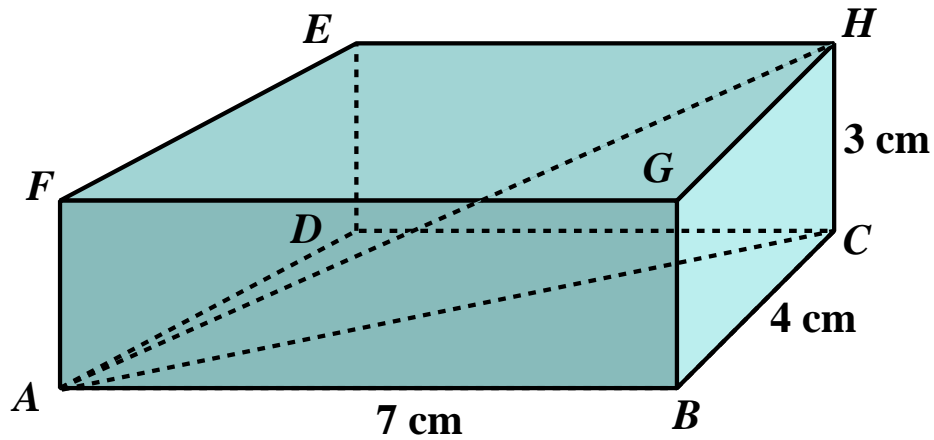
Solve the equation :

$$\frac{5}{t-3} - \frac{2}{t+2} = 0$$

[3 marks]

Question 8

A cuboid $ABCDEFGH$ measures 7 cm by 4 cm by 3 cm, as shown below.



Calculate, in degrees, the angle HAC .
Give your answer accurate to 1 decimal place.

[4 marks]

Question 9

The curve C has equation $y = 4x^3 - 3x$
Find the range of values of x for which the gradient of C is negative.

[4 marks]