

## Credit Mathematics – Homework D

### Non-calculator section:

1. Evaluate  $7.2 - 2.14 \times 3$

2. Express as a single fraction  $\frac{5}{6} + \left(1\frac{1}{2}\right)^2$

3.(a) Express  $p = a + ac$  in terms of  $a$ .

(b) Hence find  $a$  when  $p = -9$  and  $c = -4$ .

4. (a) David takes his family to the cinema and buys the following treats.



The total cost of the ice lollies and ice creams is £9.

Let  $x$  represent the cost of an ice lolly and  $y$  the cost of an ice cream.

Write down an equation involving  $x$  and  $y$ .

(b) Amanda also takes her family to the cinema. She buys the following.



Amanda pays a total of £6.50.

Write down another equation involving  $x$  and  $y$ .

(c) Find the cost of buying



5. Solve the inequation  $4 + \frac{2x}{3} > \frac{x}{2}$

### Calculator section:

6. The number of points scored by an American football team over 7 matches were

37    23    25    18    24    20    21

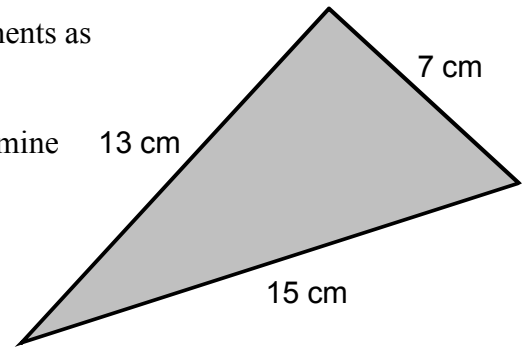
Calculate the mean and standard deviation of these scores.



7. A piece of metal in the shape of a triangle has measurements as shown.

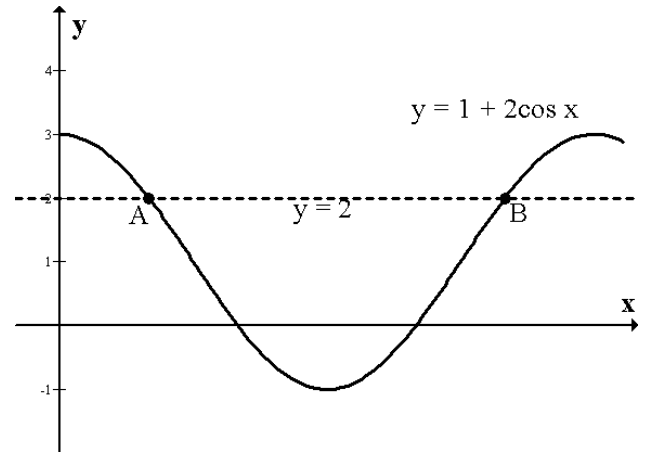
(a) By calculating the largest angle in the triangle, determine if the triangle is right angled.

(b) Calculate the area of metal in the triangle.

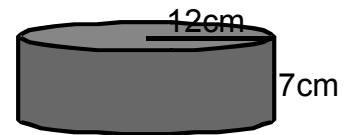


8. The diagram below shows the graph of  $y = 1 + 2\cos x$ . On the diagram the line  $y = 2$  has also been drawn.

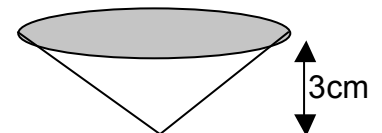
Find the x-coordinates of the points A and B.



9. (a) The diagram opposite shows a cylinder, radius 12 cm and height 7 cm. Calculate the volume of this cylinder.



- (b) The cylinder is melted down to make 50 cones of equal volume. If each cone has vertical height 3 cm, calculate the radius of each cone.



**Volume of cone = -**

10. Solve the equation  $2x^2 - x - 7 = 0$  giving your answers correct to three significant figures.

11. The diagram opposite shows a tower with a weather vane on top. From a point A, the angle of elevation to the top of the weather vane is  $51^\circ$ . From B, the angle of elevation to the top of the weather vane is  $67^\circ$ . The distance from A to B is 25 metres.

Calculate the height, h, that the top of the weather vane is from the ground.

