

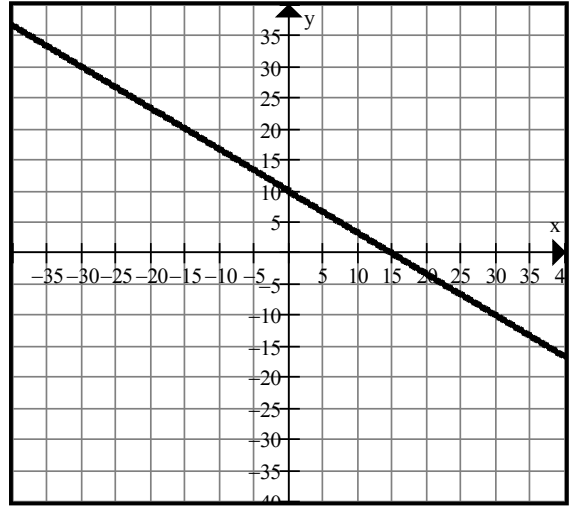
Intermediate 2 – Homework 2

Non-calculator section:

1.(a) Expand the brackets and simplify $(3x - 2)(x - 5) + 17x$

(b) Factorise fully $3x^2 - 12y^2$

2. Find the equation of the line shown
opposite



3. At a theme park called Snowworld tickets for adults and children are priced differently.

3 adult and 4 child tickets cost £99 altogether.

(a) Using x to stand for the price of an adult ticket and y to stand for the cost of a child ticket, express this information as an equation.

(b) If 5 adult and 2 child tickets cost £109, write down another equation involving x and y .

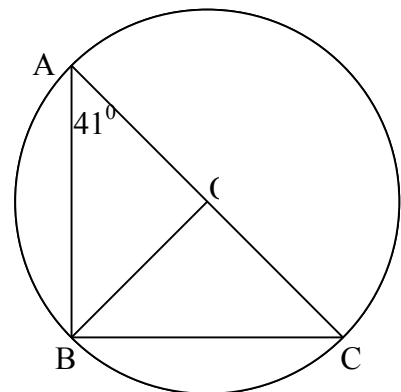
(c) Find the cost of 2 adult tickets.



4. In the diagram

O is the centre of the circle
AC is a diameter
B is a point on the circumference
Angle BAC = 41°

Calculate the size of angle BOC.

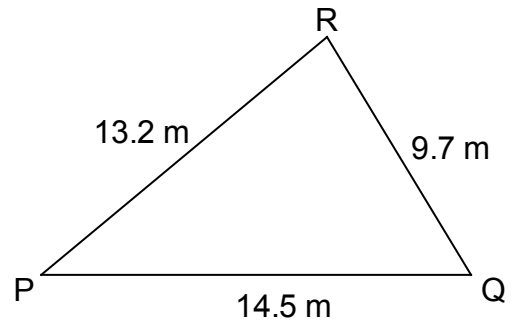


Calculator section:

5. At 4p.m. the temperature in a greenhouse is 25° Celsius. If the temperature in the greenhouse falls at a rate of 1.5% per hour, find the temperature at midnight.

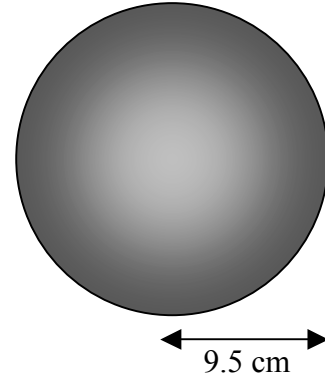


6. Triangle PQR is shown opposite with $PQ = 14.5$ m, $PR = 13.2$ m and $RQ = 9.7$ m.



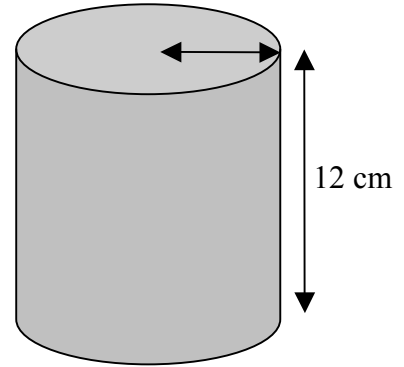
- (a) Calculate the size of the smallest angle in this triangle.
- (b) Hence find the area of this triangle.

7. (a) A solid metal sphere has radius 9.5 cm. Calculate the volume of this sphere.

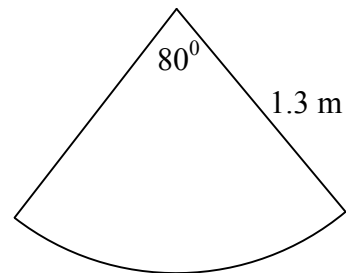


- (b) The sphere is melted down to make 6 identical cylinders of height 12 cm.

Calculate the radius of each cylinder.



8. The curved part of an anchor is in the shape of an arc of a circle of radius 1.3 metres. Find the length of this arc.



9. Two aeroplanes leave the same airport. One flies a distance of 550 km on a bearing of 075° and the other flies 630 km on a bearing of 110° . How far apart are the planes?

