

S4 Credit – Homework 3

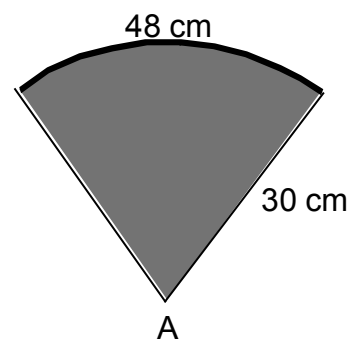
Non-calculator section:

- Express as a single fraction $2\frac{1}{3} + 1\frac{1}{6} \times \frac{3}{7}$
- $f(x) = 3x^2 - \frac{6}{x}$, find $f(-2)$.
- Solve $5x^2 = 6x + 8$
- It is estimated a comet travels at a speed of 3.8×10^5 kmph. How far will the comet travel in one week?
- Simplify $2\sqrt{3}(3\sqrt{3} - \sqrt{6})$
- Find the value of $27^{-\frac{2}{3}}$

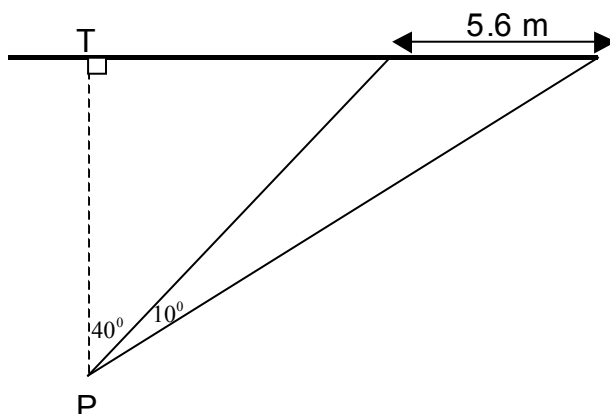
Calculator section:

- A group of pupils and teachers go to the theatre. There are 19 people in the group altogether.
 - Let x stand for the number of teachers and y for the number of pupils. Write down an equation involving x and y .
 - The tickets cost £11 for the teachers and £4.50 for the pupils. The total cost of the tickets for the whole group is £118. Write down another equation involving x and y .
 - How many pupils are in the group?

- The diagram opposite shows a fan in the shape of an arc of a circle, with radius 30 centimetres. Calculate the size of the angle at A.

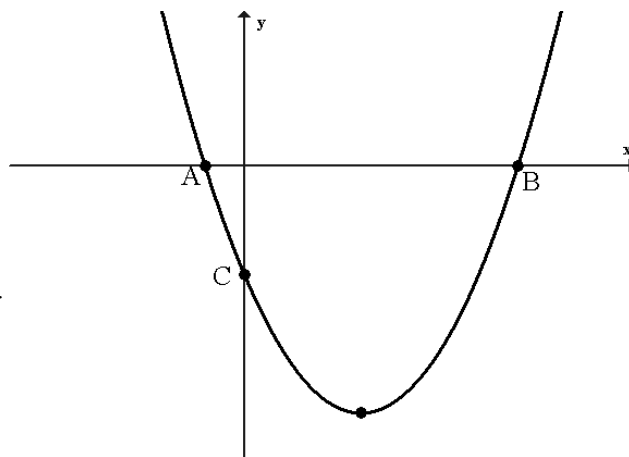


- Calculate the length of TP in the diagram.



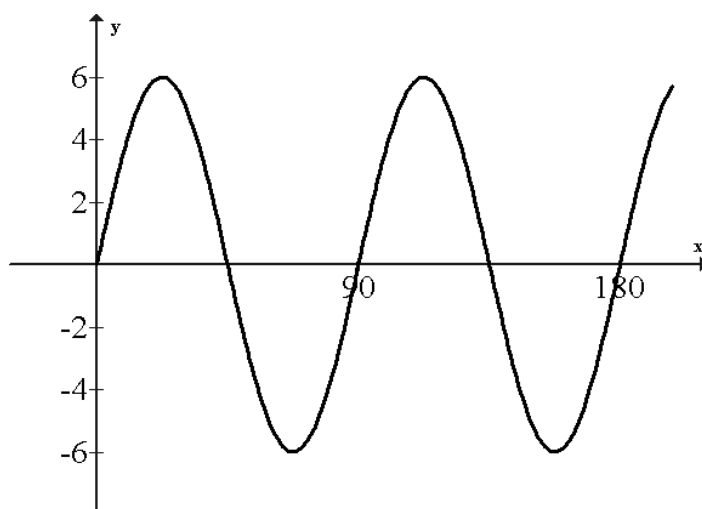
10. The diagram opposite shows part of the curve with equation $y = x^2 - 5x - 7$.

- (a) Find the coordinates of A and B.
- (b) Find the coordinates of C.
- (c) Find the minimum value of the parabola.



11. The diagram shows part of the graph of $y = a \sin bx^\circ$.

Write down the values of a and b.



12. Solve $3x^2 - 3x - 5 = 0$,

giving your answers correct to 3 significant figures.