

Find the area of the triangle in terms of  $x$ .

$$\frac{1}{2} \times 20 \times x \times \sin 30$$

$$\frac{1}{2} \times 20 \times x \times \frac{1}{2} = 5x$$

Given

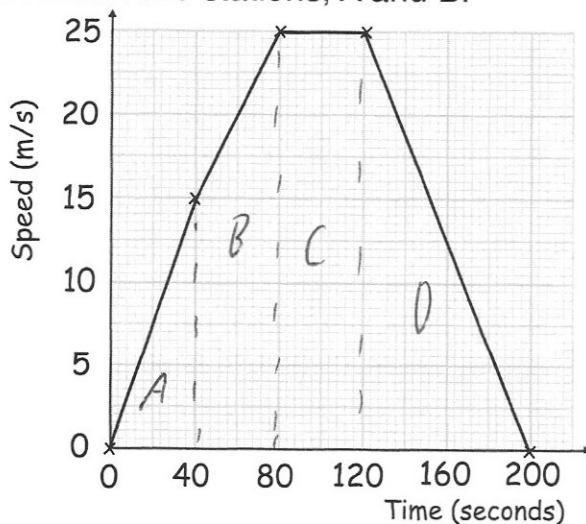
$$y = \frac{5\sqrt{3}}{2}$$

Write an expression for  $y^3$

$$\frac{5\sqrt{3}}{2} \times \frac{5\sqrt{3}}{2} \times \frac{5\sqrt{3}}{2} = \frac{125\sqrt{27}}{8}$$

$$= \frac{375\sqrt{3}}{8}$$

The graph shows information about the speed of a train during its journey between two stations, A and B.



The train is halfway between stations A and B at  $x$  seconds.

Find  $x$

$$A: \frac{1}{2} \times 40 \times 15 = 300$$

$$B: \frac{1}{2} (15 + 25) \times 40 = 800$$

$$C: 40 \times 25 = 1000$$

$$D: \frac{1}{2} \times 80 \times 25 = 1000$$

$$3000 \div 2 = 1500$$

$$1500 - 300 - 800 = 400$$

$$400 \div 25 = 16 \quad 80 + 16 = 96 \text{ seconds}$$

The point  $(-5, 1)$  is the turning point of the graph of  $y = x^2 + ax + b$

Find  $a$  and  $b$

$$y = (x+5)^2 + 1$$

$$y = x^2 + 10x + 25 + 1$$

$$y = x^2 + 10x + 26$$

$$a = 10 \quad b = 26$$