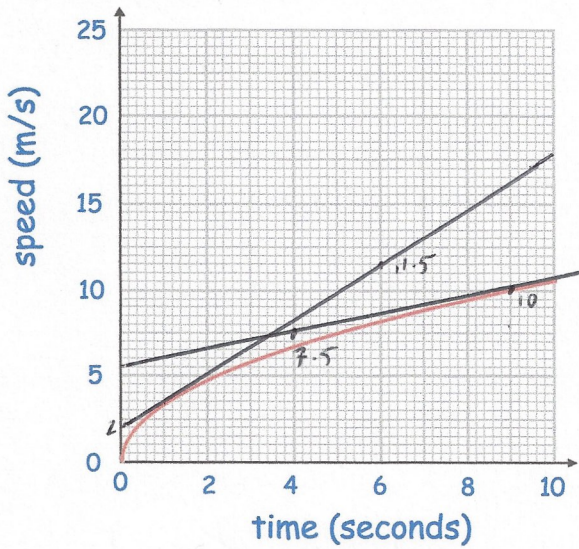


29th August



Corbettmaths



Shown is the first 10 seconds of the journey of a car

Work out an estimate for the acceleration of the car at $t = 1$.

$$\frac{11.5 - 2}{6 - 0} = 1.58\bar{3} \text{ m/s}^2$$

Work out an estimate for the acceleration of the car at $t = 9$.

$$\frac{10 - 7.5}{9 - 4} = 0.5 \text{ m/s}^2$$

Write down the coordinates of the minimum point of the curve with equation $y = 2x^2 - 6x + 11$

$$2(x^2 - 3x + 5.5)$$

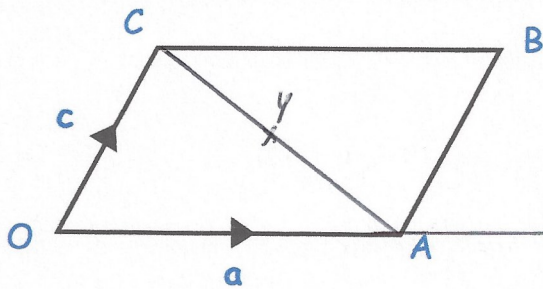
$$2[(x - 1.5)^2 - 2.25 + 5.5]$$

$$2(x - 1.5)^2 + 3.25$$

$$y = 2(x - 1.5)^2 + 3.25$$

$$y = 2(x - 1.5)^2 + 6.5$$

$$(1.5, 6.5)$$



OACB is a parallelogram

$$\vec{OA} = a \quad \vec{OC} = c$$

Y is the midpoint of AC
OAD is a straight line where
OA:AD = m : 1

Given that

$$\vec{YD} = 7a - \frac{1}{2}c$$

Find the value of ~~100~~ m

$$\vec{CA} = -c + a$$

$$\vec{YA} = -\frac{1}{2}c + \frac{1}{2}a$$

$$\vec{YA} + \vec{AD} = \vec{YD}$$

$$(-\frac{1}{2}c + \frac{1}{2}a) + \vec{AD} = 7a - \frac{1}{2}c$$

$$\vec{AD} = 6\frac{1}{2}a$$

$$OA:AD$$

$$1:6.5$$

$$\frac{2}{13}:1$$