20th February **Higher Plus 5-a-day**

Corbettmaths

Make c the subject of

$$w = 6 + \frac{a}{c+2}$$

$w - 6 = \frac{a}{c+2}$

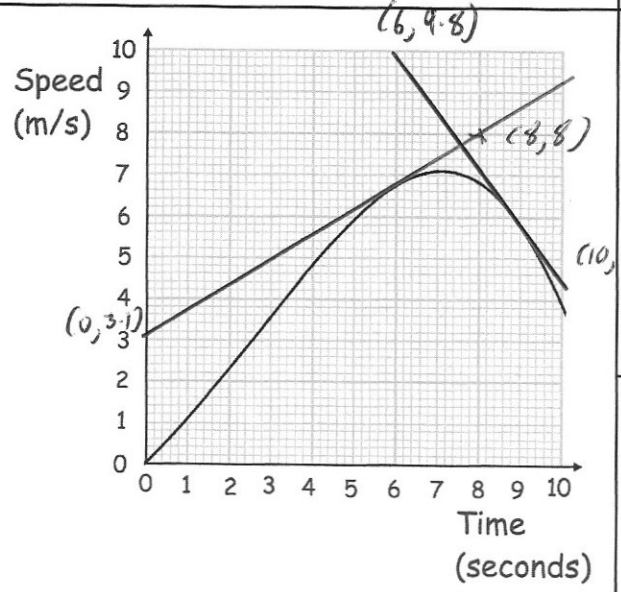
$(w-6)(c+2) = a$

$cw + 2w - 6c - 12 = a$

$cw - 6c = a + 12 - 2w$

$c(w-6) = a + 12 - 2w$

$$c = \frac{a + 12 - 2w}{w - 6}$$



Calculate an estimate for the acceleration at t = 6

$\frac{\text{rise}}{\text{run}} = \frac{8 - 3.1}{8} = 0.6125 \text{ m/s}^2$

Calculate an estimate for the deceleration at t = 9

$\frac{\text{rise}}{\text{run}} = \frac{-5.4}{4} = -1.35 \text{ m/s}^2$

1.35 m/s^2

* I have also got an answer of 1.8 m/s^2 when I tried this question before.

Given

$f(x) = 5x + 1$

$g(x) = 8 - 2x$

$gf(x) = 8 - 2(5x + 1)$

$= 8 - 10x - 2$

$= 6 - 10x$

Solve

$gf(x) = 0$

$6 - 10x = 0$

$6 = 10x$

$x = \frac{6}{10} = \frac{3}{5}$ $x = 0.6$

A scientist wants to estimate the number of frogs living near a lake.

On Friday she catches 250 frogs and tags them. She then releases the frogs.

On Saturday the scientist catches 80 frogs and 35 of them are tagged.

Estimate the number of frogs that live near the lake.

$\frac{250}{N} = \frac{35}{80}$

$35N = 20000$

$N = 571.428...$

571 (or 572)

* the gradient of the tangent is an approximate. In exams they often allow a range of possible answers.