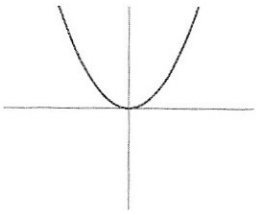
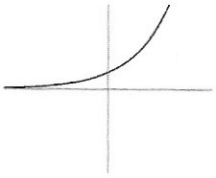
20th April **Higher Plus 5-a-day** Corbettmaths

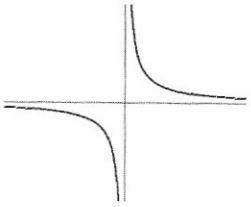
Graph A



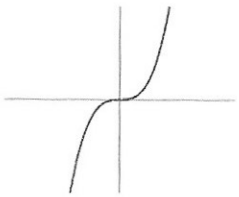
Graph B



Graph C



Graph D



$y = x^2$ is graph **A**

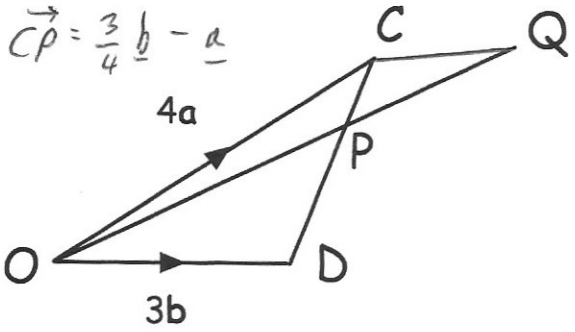
$y = x^3$ is graph D

$y = 2^x$ is graph B

$y = \frac{1}{x}$ is graph C

$\vec{CO} = 3\underline{b} - 4\underline{a}$

$\vec{CP} = \frac{3}{4}\underline{b} - \underline{a}$



P is a point on the line CD, such that CP:PD = 1:3

Find the vector $\vec{OP}$

$\vec{OP} = \vec{OC} + \vec{CP}$

$= 4\underline{a} + \frac{3}{4}\underline{b} - \underline{a}$

$= 3\underline{a} + \frac{3}{4}\underline{b}$

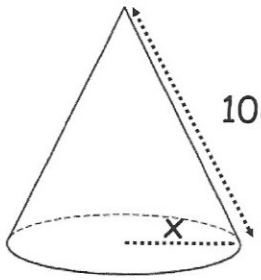
The line OP is extended, such that $OP = \frac{3}{5}OQ$ $\vec{OQ} = 5\underline{a} + \frac{5}{4}\underline{b}$

Find the vector $\vec{CQ}$

$\vec{CQ} = \vec{CO} + \vec{OQ}$

$= -4\underline{a} + 5\underline{a} + \frac{5}{4}\underline{b}$

$= \underline{a} + \frac{5}{4}\underline{b}$



Curved SA $= \pi r l$

$\pi \times x \times 10$

$= 10\pi x$

The total surface area of the cone is 39π cm²

Find the length of the radius.

$10\pi x + \pi x^2 = 39\pi$

$10x + x^2 = 39$

$x^2 + 10x - 39 = 0$

$(x+13)(x-3) = 0$

$x = -13$ $x = 3$ 3cm

x ✓