22nd April

Corbettmaths

Work out

$$\frac{8}{4x^3} + \frac{7}{3x^2}$$

$\frac{24}{12x^3} + \frac{28x}{12x^3}$
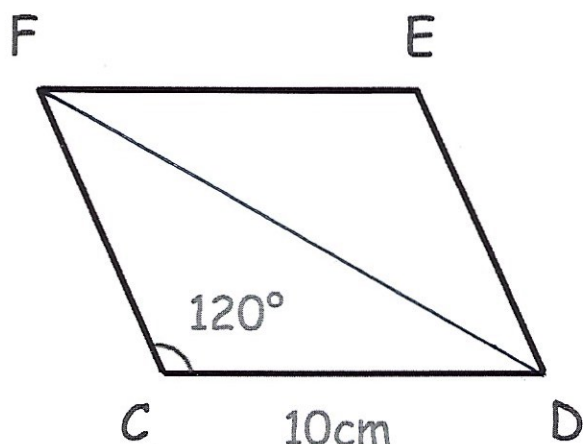
Give your answer as a single fraction in its simplest form

$= \frac{24 + 28x}{12x^3}$

$= \frac{12 + 14x}{6x^3}$

$= \frac{6 + 7x}{3x^3}$

$\frac{6 + 7x}{3x^3}$

CDEF is a rhombus.

F   E

120°

C   10cm   D

Find the area of CDEF.

Area $\triangle$ CDF:

$\frac{1}{2} \times 10 \times 10 \times \sin 120$

$= 25\sqrt{3}$

Area CDEF $= 50\sqrt{3}$ cm²

A curve has equation
$y = 4x^2 + 2x - 3$

A normal to the curve is drawn at the point A.
The normal is parallel to the line with equation $x - 6y = 2$

$6y = x - 2$

$y = \frac{1}{6}x - \frac{1}{3}$

Find the equation of the normal at the point A.

Give your answer in the form
$y = mx + c$

$\frac{dy}{dx} = 8x + 2$

$8x + 2 = -6$

$8x = -8$

$x = -1$

$y = -1$

$y = \frac{1}{6}x + c$

$-1 = -\frac{1}{6} + c$

$c = \frac{-5}{6}$

$y = \frac{1}{6}x - \frac{5}{6}$