



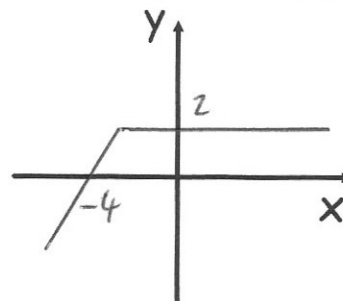
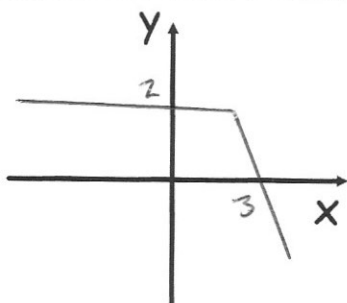
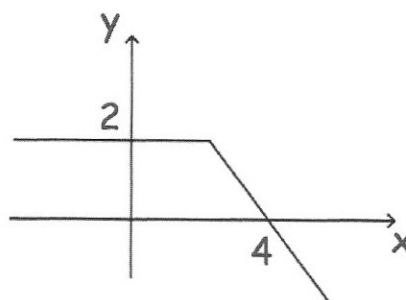
Simplify fully

$$\frac{4x^2 - 25}{6x^2 - 11x - 10} = \frac{(2x/5)(2x+5)}{(3x+2)(2x-5)} = \frac{2x+5}{3x+2}$$

Shown is the graph of the function $y = f(x)$

Sketch

- (a) $f(x + 1)$ one left
- (b) $f(-x)$ reflection y-axis



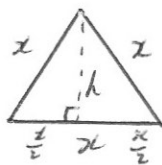
A formula for the area of a regular hexagon with side length x is given.

Area = $\frac{3}{2} \sqrt{3} x^2$ *six triangles*

Prove this formula.

$$h^2 + \left(\frac{x}{2}\right)^2 = x^2$$

$$h^2 = \frac{3}{4} x^2$$



$$h = \frac{\sqrt{3}}{2} x$$

$$\text{Area of } \Delta = \frac{1}{2} b h$$

$$= \frac{1}{2} x \left(\frac{\sqrt{3}}{2} x\right)$$

$$= \frac{\sqrt{3}}{4} x^2$$

$$\frac{\sqrt{3}}{4} x^2 \times 6 = \frac{3}{2} \sqrt{3} x^2 \quad \text{QED}$$

The straight line l_1 has equation $3x + y - 1 = 0$
 The straight line l_2 is perpendicular to line l_1 and passes through the point $(8, 2)$

Find the equation of l_2 in the form $y = mx + c$

$$m = \frac{1}{3}$$

$$y = \frac{1}{3}x + c$$

$$2 = \frac{8}{3} + c$$

$$c = -\frac{2}{3}$$

$$y = \frac{1}{3}x - \frac{2}{3}$$