



Given

$$f(x) = \frac{2+x}{3} \quad f(11) = \frac{2+11}{3}$$

find

$$f(11) = \frac{13}{3}$$

Given

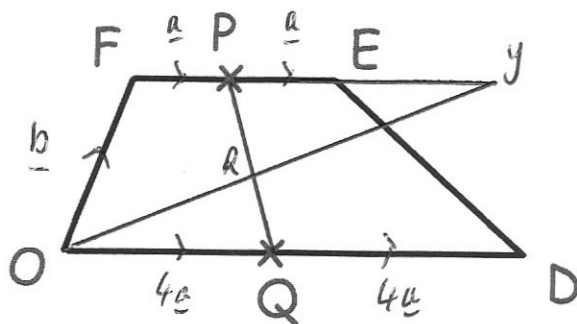
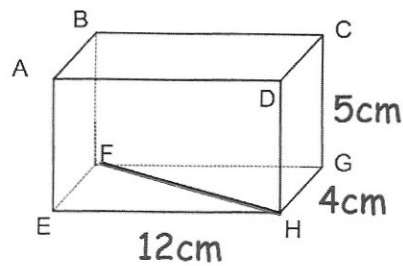
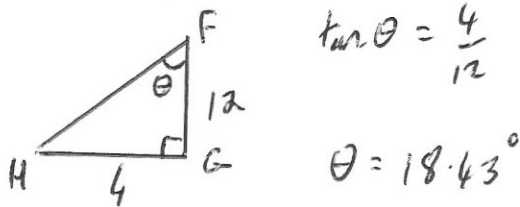
$$f(a) = 0 \quad \frac{2+x}{3} = 0$$

find a

$$2+x=0$$

$$x=-2$$

Calculate angle HFG



$\vec{OP}$

$$\underline{a} + \underline{b}$$

ODEF is a trapezium

P is the midpoint of FE

Q is the midpoint of OD

$$\vec{FE} = 2a \quad \vec{OF} = b \quad \vec{OD} = 8a$$

Find in terms of **a** and **b**

$$\vec{PQ} = \vec{PF} + \vec{FO} + \vec{OQ}$$

$$= -\underline{a} + (-\underline{b}) + 4\underline{a}$$

$$= 3\underline{a} - \underline{b}$$

R is the midpoint of  $\vec{PQ} = 2\vec{PR}$

$$\vec{OR} = \vec{OF} + \vec{FR} = \vec{OF} + \vec{FP} + \vec{PR}$$

$$= \underline{b} + \underline{a} + \frac{1}{2}(3\underline{a} - \underline{b})$$

$$= 2.5\underline{a} + 0.5\underline{b}$$

The lines OR and FE are extended and meet at the point Y.

$$\vec{OY} = 5\underline{a} + \underline{b}$$

$$\vec{QY} = \vec{QO} + \vec{OY}$$

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

$$= \underline{a} + \underline{b}$$