3rd October

Corbettmaths

c is 40% more than w
d is 70% less than y

c = 4d

Work out y : w

$c = 1.4w$
$d = 0.3y$

$1.4w = 1.2y$

$\frac{y}{w} = \frac{1.4}{1.2} = \frac{7}{6}$

$y : w = 7 : 6$

M is the midpoint of CD
AB is perpendicular to CD and passes through M.
C is the point (0, 12) D is the point (6, 0)
M(3, 6)
Find the coordinates of the point where AB crosses the y-axis.

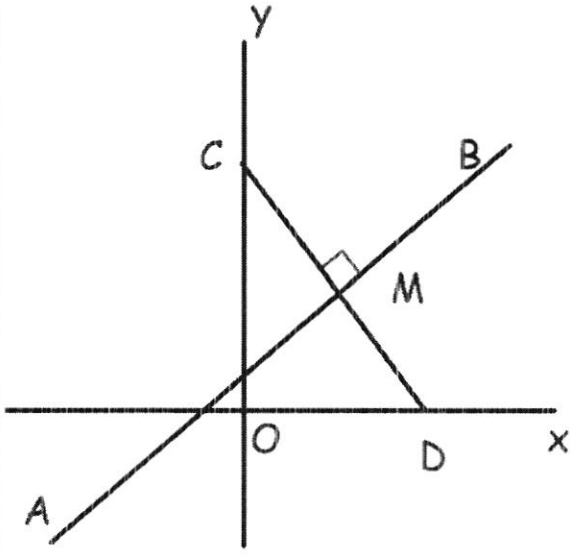
$m_{CD} = \frac{12-0}{0-6} = -2 \quad m_{\perp} = \frac{1}{2}$

Eqt. AB: $y - 6 = \frac{1}{2}(x-3)$

$y = \frac{1}{2}x + \frac{9}{2}$

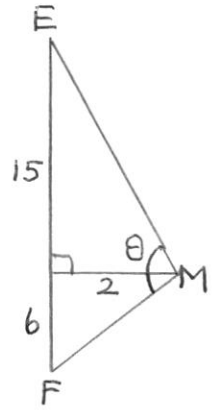
$\downarrow$

$(0, \frac{9}{2})$



ABCDE and ABCDF are square based pyramids with AB = 4cm.
The vertex E is directly above the centre of ABCD and the vertex F is directly below the centre of ABCD.

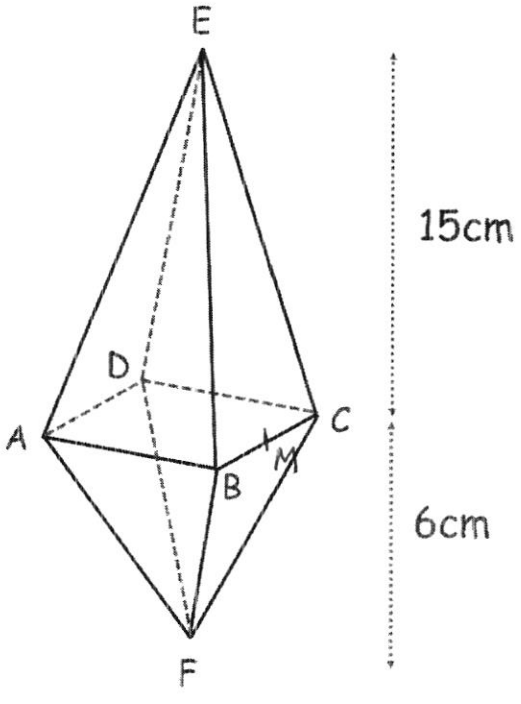
Calculate the angle between planes BCF and BCE.



$\theta = \tan^{-1}\left(\frac{15}{2}\right) + \tan^{-1}\left(\frac{6}{2}\right)$

$= 154.0°$

$(26.0°)$



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