

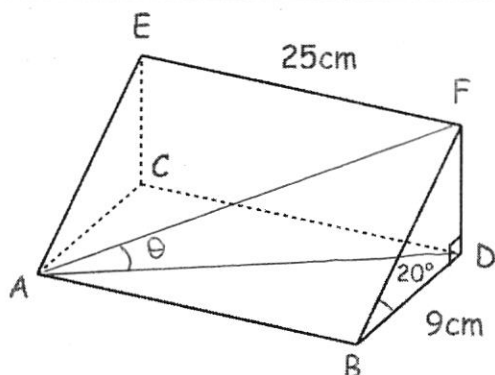
14th July



Find where the matrix  $\begin{pmatrix} 7 & -4 \\ 2 & -3 \end{pmatrix}$  maps the point  $(-9, 1)$

$$\begin{pmatrix} 7 & -4 \\ 2 & -3 \end{pmatrix} \begin{pmatrix} -9 \\ 1 \end{pmatrix} = \begin{pmatrix} -67 \\ -21 \end{pmatrix}$$

$$(-9, 1) \rightarrow \underline{(-67, -21)}$$



Work out the size of angle DAF

$$DA = \sqrt{25^2 + 9^2} = \sqrt{706}$$

$$DF = 9 \tan 20^\circ = 3.28 \text{ cm}$$

$$\tan \hat{DAF} = \frac{DF}{DA} = 0.1233$$

$$\underline{\hat{DAF} = 7.03^\circ}$$

Solve  $x^3 - 14x^2 + 56x - 64 = 0$   
 $f(x) = 0$

$$f(2) = 8 - 56 + 112 - 64 = 0$$

$$\Rightarrow x - 2 \text{ factor}$$

$$f(x) = (x - 2)(x^2 - 12x + 32)$$

$$= (x - 2)(x - 4)(x - 8)$$

$$f(x) = 0 \Rightarrow \underline{x = 2, 4, 8}$$