30th December **Higher Plus 5-a-day**

Corbettmaths

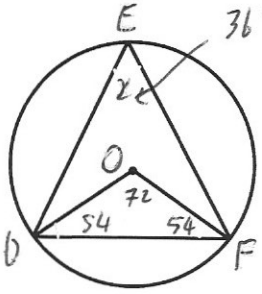
Write as a single fraction

$$\frac{4}{2x+1}+\frac{1}{x+3}$$

$\frac{4(x+3)+2x+1}{(2x+1)(x+3)}$

$\frac{4x+12+2x+1}{(2x+1)(x+3)}$

$= \frac{6x+13}{(x+3)(2x+1)}$



$2y-10=y+22$

$y=32°$

$\angle ODF = 54°$

$\angle OFD = 54°$

$\angle DOF = 72°$

Given $\angle ODF = 2y - 10°$ and $\angle OFD = y + 22°$

Find $\angle DEF$

$36°$

Prove $(n+5)^2-(n+3)^2$ is a multiple of 4.

$n^2+10n+25$

$-\ n^2+6n+9$

$4n+16$

$4(n+4)$

$\therefore$ multiple of 4

Write $(3-7\sqrt{6})(5-\sqrt{6})$ in the form $a+b\sqrt{6}$ where **a** and **b** are integers.

$15-3\sqrt{6}-35\sqrt{6}+(7\times6)$

$15-38\sqrt{6}+42$

$57-38\sqrt{6}$

Find, in terms of k, the 20th term of the arithmetic sequence

(5k – 3), (8k + 1), (11k + 5), ...

$5k \quad 8k \quad 11k \quad 3kn+2k$

$3k \quad 3k$

$-3 \quad 4 \quad 1 \quad 4 \quad 5 \quad 4n-7$

$n=20$

$62k+73$