

Qn 1 simplify

$$\frac{n+6}{5n+30}$$

$$5n+30 = 5(n+6)$$

$$\text{therefore } \frac{n+6}{5n+30} = \frac{n+6}{5(n+6)}$$

Cancel out common factor: $n+6$

$$= \frac{1}{5}$$

Qn 2

$$\frac{x^2 - 3x - 18}{x^2 + 4x + 3}$$

$$\cancel{x^2} - 3x - 18 = (x+3)(x-6)$$

$$= (x^2 + 3x) + (-6x - 18)$$

Factor out x from $x^2 + 3x$:

$$= x(x+3)$$

$$x^2 + 3x$$

apply exponent rule $a^{b+c} = a^b a^c$

$$x^2 = x \cdot x$$

$$= x \cdot x + 3x$$

Factor out common term x

$$= x(x+3)$$

Factor out -6 from $-6x - 18$

$$= -6(x+3)$$

Factor out common term -6