

$$(6x^2 + 30x + 36) : (x + 3)$$

$$\frac{6x^2 + 30x + 36}{x + 3}$$

$$\frac{6(x^2 + 5x + 6)}{x + 3}$$

$$\frac{6(x^2 + 3x + 2x + 6)}{x + 3}$$

$$\frac{6(x \cdot (x + 3) + 2(x + 3))}{x + 3}$$

$$\frac{6(\cancel{x + 3}) \cdot (x + 2)}{\cancel{x + 3}}$$

$$6(x + 2) = 6x + 12$$