

Example 3

Determine the value of the polynomial expression $5x^2 + 6x + 1$

a) if $x = 7$

$$\begin{aligned} &= 5(7)^2 + 6(7) + 1 \\ &= 5(49) + 42 + 1 \\ &= 245 + 42 + 1 \\ &= \boxed{288} \end{aligned}$$

b) if $x = -2$

$$\begin{aligned} &5x^2 + 6x + 1 \\ &= 5(-2)^2 + 6(-2) + 1 \\ &= 5(4) + (-12) + 1 \\ &= 20 - 12 + 1 \\ &= \boxed{9} \end{aligned}$$

Example 4

The polynomial expression $250 + 1.25x$ represents the cost to print a brochure, where x represents the number of brochures printed.

- a) Calculate the cost to print 3 000 brochures.

$$\begin{aligned} &= 250 + 1.25(3000) \\ &= 250 + 3750 \\ &= \$4000 \end{aligned}$$

NOTE:

The cost to print one brochure

$$\begin{aligned} &= 250 + 1.25(1) \\ &= \$251.25 \end{aligned}$$

- b) If you had a total of \$1750 in your budget, how many brochures could you print?

$$1750 = 250 + 1.25x$$

$$1750 - 250 = \cancel{250} - \cancel{250} + 1.25x$$

$$\frac{1500}{1.25} = \frac{1.25x}{1.25}$$

$$1200 = x$$

1200 Brochures