

MATHEMATICS

Class-7th

Chapter-12

Algebraic
expressions

Exercise-12.3

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"Mathematics"
"Class - VII" "Ch. 12 Algebraic Expression"
"Ex - 12.3"

Q.1 Sol. (i) Put up the value $m=2$ in equation.
 $m-2 \Rightarrow 2-2=0.$

Hence, $m-2=0$ When $m=2$.

(ii) $3m-5 \Rightarrow 3 \times m-5$

$$= 3 \times 2 - 5$$

$$= 6 - 5 = 1.$$

Hence, $3m-5=1$ When $m=2$.

(iii) $9-5m \Rightarrow 9-5 \times m$

$$= 9 - 5 \times 2$$

$$= 9 - 10 = -1$$

Hence, $9-5m=-1$ When $m=2$.

(iv) $3m^2-2m-7$

Put up the value of m in equation.

$$\Rightarrow 3 \times (2)^2 - 2 \times 2 - 7$$

$$= 3 \times 4 - 4 - 7$$

$$= 12 - 11$$

$= 1.$ Hence, $3m^2-2m-7=1$ When $m=2$.

Q. 2. Sol: (i) put $p = (-2)$ in eq.

$$4p + 7 = 4 \times p + 7$$

$$= 4 \times (-2) + 7$$

$$= -8 + 7 = -1$$

Hence, $\boxed{4p + 7 = -1}$ when $p = -2$. ✓

(ii) $-3p^2 + 4p + 7$

put $p = -2$ in equation.

$$\Rightarrow -3p^2 + 4p + 7$$

$$= -3 \times (-2)^2 + 4 \times (-2) + 7$$

$$= -3 \times 4 + (-8) + 7$$

$$= -12 - 8 + 7$$

$$= -20 + 7 = -13.$$

Hence, $\boxed{-3p^2 + 4p + 7 = -13}$ when $p = -2$. ✓

(iii) $-2p^3 - 3p^2 + 4p + 7$

put $p = -2$ in equation.

$$\Rightarrow -2p^3 - 3p^2 + 4p + 7$$

$$= -2 \times (-2)^3 - 3 \times (-2)^2 + 4 \times (-2) + 7$$

$$= -2 \times (-8) - 3 \times 4 + (-8) + 7$$

$$= 16 - 12 - 8 + 7 = 23 - 20 = 3. \checkmark$$

Hence, $\boxed{-2p^3 - 3p^2 + 4p + 7 = 3}$ when $p = -2$.

Q 3. Sol.

(i) $2x - 7$,

put $x = -1$ in equation.

$$\begin{aligned}\Rightarrow 2x - 7 &= 2 \times (-1) - 7 \\ &= -2 - 7 = -9\end{aligned}$$

Hence, $\boxed{2x - 7 = -9}$ when $x = -1$. ✓

(iii) $x^2 + 2x + 1$

put $x = -1$ in equation.

$$\begin{aligned}\Rightarrow x^2 + 2x + 1 \\ &= (-1)^2 + 2 \times (-1) + 1 \\ &= 1 - 2 + 1 \\ &= 2 - 2 = 0\end{aligned}$$

Hence, $\boxed{x^2 + 2x + 1 = 0}$ when $x = -1$. ✓

(iv) $2x^2 - x - 2$

put $x = -1$ in equation.

$$\begin{aligned}&= 2 \times (-1)^2 - (-1) - 2 \\ &= 2 \times 1 + 1 - 2 \\ &= \cancel{x} + 1 - \cancel{x} = 1.\end{aligned}$$

Hence, $\boxed{2x^2 - x - 2 = 1}$ when $x = -1$. ✓