# MATHEMATICS

## Class-7th

## Chapter-12

# Algebraic expressions

## Exercise-12.3

Part-2

-By:- A.K.Jha

Q.3. Sol.

(i) $2x-7$,

put $x=-1$ in equation.

$\Rightarrow 2x-7 = 2\times(-1)-7$

$= -2-7 = -9$

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

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

put $x=-1$ in equation.

$\Rightarrow x^2+2x+1$

$=(-1)^2+2\times(-1)+1$

$=1-2+1$

$=2-2=0$.

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

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

put $x=-1$. in equation.

$=2\times(-1)^2-(-1)-2$

$=2\times 1+1-2$

$=x+1-x=1$.

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

Q.4. Sol: (i) Here $a = 2$, $b = -2$ (given)

Now, $a^2 + b^2 = (2)^2 + (-2)^2$

$= 4 + 4 = 8$

Hence, $\boxed{a^2 + b^2 = 8}$ when $a = 2, b = -2$.

(ii) $a^2 + ab + b2$

$= (2)^2 + 2 \times (-2) + (-2)^2$

$= 4 + (-4) + 4$

$= 4 - 4 + 4 = 4$

Hence, $\boxed{a^2 + ab + b2 = 4}$ When $a = 2, b = -2$

(iii) $a^2 - b2$

$= (2)^2 - (-2)^2$

$= 4 - 4 = 0$

Hence, $\boxed{a^2 - b^2 = 0}$ When $a = 2, b = -2$.

Q.5. Sol: (i) Here, $a = 0$, $b = -1$.

$2a + 2b = 2 \times 0 + 2 \times (-1)$

$= 0 - 2 = -2$

Hence, $\boxed{2a + 2b = -2}$ when $a = 0, b = -1$.

(ii) $2a^2 + b^2 + 1$

$= 2 \times (0)^2 + (-1)^2 + 1$

$= 2 \times 0 + 1 + 1$

$= 0 + 1 + 1 = 2$

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

(iii) $2a^2b + 2ab^2 + ab$

$= 2 \times (0)^2 \times -1 + 2 \times 0 \times (-1)^2 + 0 \times (-1)$

$= 2 \times 0 \times -1 + 2 \times 0 \times 1 + 0 \times (-1)$

$= 0 + 0 + 0 = 0$

Hence, $\boxed{2a^2b + 2ab^2 + ab = 0}$ when $a = 0, b = -1$.

(iv) $a^2 + ab + 2$

$= (0)^2 + 0 \times (-1) + 2$

$= 0 + 0 + 2 = 2$

Hence, $\boxed{a^2 + ab + 2 = 2}$ when $a = 0, b = -1$.

Q. 6. Sol: Here $\boxed{x = 2}$ given, →

(i) $x + 7 + 4(x-5)$

$= x + 7 + 4x - 20$

$= x + 4x + 7 - 20$

$= 5x + (-13) = 5x - 13.$ — (1)

Now, put the value of x in eq.

$= 5 \times (2) - 13$

$= 10 - 13 = -3$

Hence, $\boxed{x + 7 + 4(x-5) = -3}$ when $x = 2$.

(ii) $3(x+2) + 5x - 7$

$= 3x + 6 + 5x - 7$

$= 3x + 5x + 6 - 7$

$= 8x - 1$ — (i)

put up the value of x in eq (i)

$= 8 \times (2) - 1$

$= 16 - 1 = 15.$

Hence, $\boxed{3(x+2) + 5x - 7 = 15}$ when $x = 2$.

(iii) $6x + 5(x-2) = 6x + 5x - 10$

$= 11x - 10$ — (i) up up value of x in eq (i)

$= 11 \times 2 - 10 = 22 - 10 = 12.$

Hence, $\boxed{6x + 5(x-2) = 12}$ when $x = 2$.