

Worksheet 2015-8 ED-00005(2)

(1) Determine the sum of the following expressions:

(a) $4p + 3q^2 - 1$; $p^4 - 3q^2 + 6$; $17 + p - 2p^4$

$$\begin{aligned} \therefore & \underline{4p} + \underline{3q^2} - \underline{1} + \underline{1p^4} - \underline{3q^2} + \underline{6} + \underline{17} + \underline{1p} - \underline{2p^4} \\ & = 5p + 22 - 1p^4 \end{aligned}$$

(b) $\frac{4x^6 - 12x^3 + 8x^2}{2x}$ en $6x^2 - 4x - 2x^5$

$$\begin{aligned} & = \frac{4x^6}{2x} - \frac{12x^3}{2x} + \frac{8x^2}{2x} + 6x^2 - 4x - 2x^5 \\ & = \underline{2x^5} - \underline{6x^2} + \underline{4x} + \underline{6x^2} - \underline{4x} - \underline{2x^5} \\ & = 0 \end{aligned}$$

(2) Which of the following statements is not true? Correct the incorrect statement(s).

(a) $-x^2 + 1 = 1 - x^2$

True

(c) $3x + 5x = 8x^2$

False
 $3x + 5x = 8x$

(3) Simplify as far as possible:

(a) $3xy + 3x - y - 4xy$

$$= -1xy + 3x - y$$

(b) $\underline{-9m} - \underline{3m} + \underline{1m} - 6mn$

$= \underline{-11m - 6mn}$

(c) $\widehat{4x(3y - 2x)}$

$= \underline{12xy - 2x^2}$

(d) $\widehat{k^2 p'(4k^3 + p^2)}$

$= \underline{4k^5 p' + k^2 p^3}$

(e) $\frac{4n^3 - n(n^4)}{n^2}$

$= \frac{4n^3 - n^5}{n^2}$

$= \frac{4n^3}{n^2} - \frac{n^5}{n^2} = \underline{4n - n^3}$

(f) $5 + 3(\widehat{k - 2})$

$= \underline{5 + 3k - 6}$

$= \underline{3k - 1}$

(4) Calculate the value(s) of P if $P = 3x - y^2$ with $x = 2$ and $y \in \{-2; 0; 3\}$

$x = 2$ and $y \in \{-2; 0; 3\}$

$P = 3x - y^2$

$\therefore P = 3(2) - y^2 = \underline{6 - y^2}$

As $y = -2$: $P = 6 - (-2)^2 = 6 - 4 = 2$

As $y = 0$: $P = 6 - (0)^2 = 6 - 0 = 6$

As $y = 3$: $P = 6 - (3)^2 = 6 - 9 = -3$

(5) Complete the following tables and write a relation between x and y :

(a)

x	-2	-1	0	3	4	7
y	5	2	1	10	17	50

$$\therefore y = x^2 + 1$$

(b)

x	-4	0	2	4	6	7	11
y	-11	-7	-5	-3	-1	0	4

$$\therefore y = x - 7$$

(6) If $k = 0$; $x = -3$ and $y = 2$, calculate the value of:

(a) xyk

$$= (-3)(2)(0)$$

$$= 0$$

(b) $3y - 2x$

$$= 3(2) - 2(-3)$$

$$= 6 + 6$$

$$= 12$$

(c) yx^k

$$= (2)(-3)^0$$

$$= 2(1)$$

$$= 2$$

(d) $x^y \cdot y^x$

$$= (-3)^2 \cdot (2)^{-3}$$

$$= 9 \times \frac{1}{2^3}$$

$$= 9 \times \frac{1}{8}$$

$$= \frac{9}{8}$$