Review Exercise Set 18

Exercise 1: State whether the expression is a monomial, binomial, trinomial, or none of these.

$3x^3 - 2xy^2 + 14$

Exercise 2: State whether the expression is a monomial, binomial, trinomial, or none of these.

$$3\sqrt{x} - \frac{xy^2}{2} + y^5$$

Exercise 3: State the degree of the polynomial.

$3a^4 + 8a^2b^3 - ab^5$

Exercise 4: Simplify.

$(x^2 + 4x - 10) + (2x^2 - x + 7)$

Exercise 5: Simplify.

$(2y^3 + 5y - 7) - (4y^3 - y^2 - 9)$

Exercise 6: Simplify.

$$\left(\frac{3}{4}x^2 + \frac{1}{2}x - \frac{3}{8}\right) + \left(\frac{1}{8}x^2 - \frac{5}{6}x + \frac{1}{4}\right)$$

Review Exercise Set 18 Answer Key

Exercise 1: State whether the expression is a monomial, binomial, trinomial, or none of these.

$3x^3 – 2xy^2 + 14$

This expression has three terms $3x^3$, $–2xy^2$, and 14. Therefore, it would be a trinomial.

Exercise 2: State whether the expression is a monomial, binomial, trinomial, or none of these.

$$3\sqrt{x} - \frac{xy^2}{2} + y^5$$

This expression is also a trinomial because it has three terms $3\sqrt{x}$, $\frac{xy^2}{2}$, and y^5

Exercise 3: State the degree of the polynomial.

$3a^4 + 8a^2b^3 – ab^5$

First, we would find the degree of each individual term. The degree of the term is equal to the sum of the exponents on the variables.

Term 1: $3a^4$ - degree is 4
Term 2: $8a^2b^3$ - degree is 2 + 3 = 5
Term 3: ab^5- degree is 1 + 5 = 6

The degree of the polynomial would be equal to the highest degree power of the terms.

degree of the polynomial = 6

Exercise 4: Simplify.

$(x^2 + 4x – 10) + (2x^2 – x + 7)$

Remove parenthesis

$= x^2 + 4x – 10 + 2x^2 – x + 7$

Group common terms and list in descending degree power

$= (x^2 + 2x^2) + (4x – x) + (–10 + 7)$

Exercise 4 (Continued):

Simplify

$= (3x^2) + (3x) + (-3)$
$\mathbf{= 3x^2 + 3x - 3}$

Exercise 5: Simplify.

$(2y^3 + 5y - 7) - (4y^3 - y^2 - 9)$

Remove parenthesis and distribute negative

$= 2y^3 + 5y - 7 - (4y^3) - (-y^2) - (-9)$
$= 2y^3 + 5y - 7 - 4y^3 + y^2 + 9$

Group common terms and list in descending degree power

$= (2y^3 - 4y^3) + y^2 + 5y + (-7 + 9)$

Simplify

$\mathbf{= -2y^3 + y^2 + 5y + 2}$

Exercise 6: Simplify.

$$\left(\frac{3}{4}x^2 + \frac{1}{2}x - \frac{3}{8}\right) + \left(\frac{1}{8}x^2 - \frac{5}{6}x + \frac{1}{4}\right)$$

Remove parenthesis

$$= \frac{3}{4}x^2 + \frac{1}{2}x - \frac{3}{8} + \frac{1}{8}x^2 - \frac{5}{6}x + \frac{1}{4}$$

Group common terms and list in descending degree power

$$= \left(\frac{3}{4}x^2 + \frac{1}{8}x^2\right) + \left(\frac{1}{2}x - \frac{5}{6}x\right) + \left(-\frac{3}{8} + \frac{1}{4}\right)$$

Get common denominators

$$= \left(\frac{6}{8}x^2 + \frac{1}{8}x^2\right) + \left(\frac{3}{6}x - \frac{5}{6}x\right) + \left(-\frac{3}{8} + \frac{2}{8}\right)$$

Exercise 6 (Continued):

Simplify

$$= \frac{7}{8}x^2 - \frac{2}{6}x - \frac{1}{8}$$
$$= \frac{7}{8}x^2 - \frac{1}{3}x - \frac{1}{8}$$