

Chap. 4

READ: You must show work in order to receive credit.

1. Simplify each expression.

a) $m^3(mm^4)$

b) $(t^2)^3(2t^2)^4$

2. Simplify each of the following expressions. Write the final answer without any parentheses or negative exponents.

a) $-7x^0$

b) $-2x^4x^{-7}$

c) $\frac{4p^3}{p^{-4}p^{-1}}$

d) $(2x^4y^{-2})^{-4}$

e) $\left(\frac{a^{-2}b^{-1}}{3a^3b^{-2}}\right)^{-2}$

3. Evaluate the following expression when $x = -2$: $-3x^2 + 5x + 14$

4. a) Write in scientific notation: 0.0020833 (3 pt)

b) Write in standard notation: 4.58×10^6

5. Multiply or divide. Write your answer in scientific notation.

a) $(3.5 \times 10^9)(3.2 \times 10^{-6})$

b) $\frac{(1.2 \times 10^5)}{(2.4 \times 10^{-5})}$

6. Use the polynomial, $2x^2y^2 - 3x^2y^3 + 5xy^2 + 3$, to answer the following questions.

a) Is this polynomial a monomial, a binomial, a trinomial, or none of these?

b) What is the degree of the third term?

c) What is the degree of this polynomial?

d) What is the coefficient of the second term.

7. Simplify.

a) $(b^2c)^2 - 4b^4c^2 + (3b^2)^2 c^2$

b) $-2(2x - y) + 3(x - 2y) + 5(x + y)$

c) $3x^2y^2 - xy + y^2 - 2(-4x^2y^2 - 3xy - xy^2 + 2y^2)$

8. Subtract: $x^2 - 4x - 5$

$$\underline{3x^2 - 7x + 4}$$

9. Find the product and simplify.

a) $5y^2(y^4 + 3y - 2)$

b) $(4m^3 + 3)(4m^3 - 3)$

c) $(x - 3y)^2$

d) $(3x - 2)(4x + 3)$

e) $(2x - y)(x + 2y)$

f) $(4x - 5)(x^2 - 2x - 1)$

g) $(5x^2 + y)(2x^2 + 3y)$

10. Divide:

a) $\frac{3a^4 - 2b^2 + 6ab}{6a^2b}$

b) $x + 2 \overline{)3x^3 + x^2 - 10}$