Name: Date:
Instructor: Section:

Practice Set 5.1

Use the choices to fill in each blank.

quadratic	linear	polynomial	equation	ascending
cubic	terms	binomial	expression	descending

1. The parts of an expression that are added are called _____.

2. A finite sum of terms in which all variables have whole number exponents and no variable in a denominator is called a _____.

3. A polynomial in one variable that is degree 2 is called _____.

4. A polynomial in one variable that is degree 3 is called _____.

5. A polynomial that is degree 0 or 1 is called _____.

6. A polynomial written so that the exponents on the variable decrease from left to right is written in _____ order.

Determine whether each expression is a polynomial (specify type: binomial, monomial, trinomial, if possible) or not a polynomial.

7. -1 **7.**_____

8. $3x^{-2}$ **8.**_____

9. $5x^2 + 2x - 3$ **9.**_____

10. $3x + 1$ **10.**_____

11. $2x^3 + 2x^2 + 2x + 2$ **11.**_____

Write each polynomial in descending order of the variable x.

12. $2x + 3x^2 - x^3 + 1$ **12.**_____

13. $-3 - xy + 3x^2y + x^3y^2$ **13.**_____

Give a) the degree of each polynomial and b) its leading coefficient.

14. $x^4 + 3x^5 - x + x^2 - 1^6$ **14.a)**_____**b)**_____

15. $-m^3n^4p^5 + 4m^5n^3p^2 - 2m^{13}$ **15.a)** _____ **b)**_____

Evaluate each polynomial function at the given value.

16 $P(-1)$ if $P(x) = x^2 + 3x - 5$ **16.**_____

17. $P(3)$ if $P(x) = 0.3x^3 - x^2 + x$ **17.**_____

18 $P(0.2)$ if $P(x) = 0.1x^2 + 1.4x - 1.2$ **18.**_____

19. $P\left(\frac{1}{2}\right)$ if $P(x) = 4x^2 - 2x + 1$ **19.**_____

Simplify.

20. $(x^2 + 2x - 1) + (5x - 4)$ **20.**_____

21. $(3d^2 - 2d + 1) - (4d^2 + 3d - 3)$ **21.**_____

22. $(4m^2 + 3m - 3) - (2m + 1)$ **22.**_____

23. $(3y + 2) - (y^2 + 2y - 7)$ **23.**_____

24. $(x^2y + xy^2 + y) - (4x^2y - 2xy^2 - 3y)$ **24.**_____

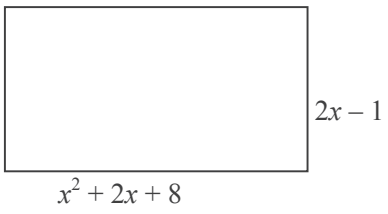
25. $\left(\frac{1}{2}x^2y + \frac{1}{3}xy^2 - \frac{1}{4}y\right) - \left(\frac{1}{3}x^2y - \frac{1}{2}xy^2 + \frac{3}{8}\right)$ **25.**_____

26. $(1.2m^2n - 2.3mn^2 + 3.1n) - (-0.8m^2n + 0.6mn^2 - 4.6n)$ **26.**_____

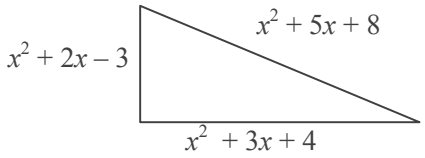
27. $-[-(3s^2 - 2s) - (3s - 4s^2) - s^2]$ **27.**_____

Find an expression for the perimeter of each figure.

28. **28.**_____



29. **29.**_____



Problem Solving

30. The volume of a cube is a function of its side, s, where $V(s) = s^3$. Find the volume of a cube with a base edge of 6 cm. **30.**_____