

## Chapter 3 Section 6: Polynomials

### Problems

Identify each as a polynomial (P) or not a polynomial (N).

1.  $3x + 2$  \_\_\_\_\_

2.  $2t^2 - 4$  \_\_\_\_\_

3.  $uv - 2u$  \_\_\_\_\_

4.  $5 + 6y$  \_\_\_\_\_

5.  $3 - 8n^2$  \_\_\_\_\_

6.  $\frac{u - v}{v}$  \_\_\_\_\_

7.  $\frac{1 + t^3}{t}$  \_\_\_\_\_

8.  $y$  \_\_\_\_\_

9.  $17.6$  \_\_\_\_\_

10.  $x - 2xy$  \_\_\_\_\_

11.  $0$  \_\_\_\_\_

12.  $13$  \_\_\_\_\_

13.  $\frac{p - q}{p} - \frac{p}{q - p}$  \_\_\_\_\_

14.  $5 - 5$  \_\_\_\_\_

15.  $x$  \_\_\_\_\_

16.  $\frac{m}{n + 1} + \frac{n + 1}{m}$  \_\_\_\_\_

17.  $-8 + 8$  \_\_\_\_\_

18.  $4x - 3$  \_\_\_\_\_

19.  $\frac{9}{5}C + 32$  \_\_\_\_\_

20.  $\pi r^2$  \_\_\_\_\_

21.  $\frac{4}{3}\pi r^3 + 2\pi rh$  \_\_\_\_\_

22.  $\sqrt{x + y}$  \_\_\_\_\_

23.  $2x^2 + 3x^3 + t - x^4$   
\_\_\_\_\_

24.  $\frac{5}{9}F - \frac{160}{9}$  \_\_\_\_\_

25.  $4 - \sqrt{xy}$  \_\_\_\_\_

26.  $5y^3 - y + u^2$  \_\_\_\_\_

27.  $4t^3 - 3t^2 - 4t^3 + 3t^2$  \_\_\_\_\_

28.  $\frac{1}{x} + \frac{2}{y} - \frac{1}{x} - \frac{2}{y}$  \_\_\_\_\_

29.  $\frac{8}{r} - \frac{6}{7} - \frac{8}{r}$  \_\_\_\_\_

30.  $8uv + 6r - 8uv - 6r$  \_\_\_\_\_

In each algebraic expression, write N if it's not a polynomial. Otherwise (after combining like terms), specify the degree of the polynomial.

31.  $2x^2 - 4 - t$   
\_\_\_\_\_

32.  $4x \cdot 3x^2 - 5x^2$   
\_\_\_\_\_

33.  $(-8u)uv$   
\_\_\_\_\_

34.  $9 - 3u + u^2$   
\_\_\_\_\_

35.  $5pqr^2 - \frac{u}{v}$   
\_\_\_\_\_

36.  $3rst + x^5 - 3rst$   
\_\_\_\_\_

37.  $7x^3y - 8xy^2 - 7yx^3$   
\_\_\_\_\_

38.  $\frac{m + 1}{n} - 1.7x^2y$   
\_\_\_\_\_

Combine like terms to rewrite each of these polynomials in the space provided.

39.  $uv - u + 3uv$

---

40.  $x^2y + xy - 3x^2y$

---

41.  $1 + 4x + 6x^2 + 4x + 1$

---

42.  $9x + 2mn - 6x - 2mn$

---

43.  $8r^3 - 6t - 8r^3 - 6t$

---

44.  $\frac{14}{t} - 8 - \frac{14}{t}$

---

45.  $\sqrt{2xy} + 19 - \sqrt{2xy}$

---

46.  $7 - q - 7 + q$

---

47.  $3r + 5 - r^2 - 3r + 5$

---

48.  $1 + 3x + 3x + 1$

---

49.  $t^2 - 22 - t^2 + 22$

---

50.  $1 + n + 2m^2 - n + 1$

---

For each expression that is a polynomial, combine like terms, and then determine its degree, and state if it's a monomial, binomial, or trinomial.

51.  $8x^3 - 9x + 2x$

Degree: \_\_\_\_\_

52.  $9w^2 + 2w^4 - 8$

Degree: \_\_\_\_\_

53.  $3uv - x^2$

Degree: \_\_\_\_\_

54.  $14 + 2x - x - 1 - x$

Degree: \_\_\_\_\_

55.  $4t - 9 - 3t + 4 - t$

Degree: \_\_\_\_\_

56.  $t^3 - 7xyz$

Degree: \_\_\_\_\_

57.  $19r^2 - 87rs^2 + 4s$

Degree: \_\_\_\_\_

58.  $6r^4 + 2 - t^3 - 3r^4 + 1 - 3r^4$

Degree: \_\_\_\_\_

59.  $x^2 - 2n^3 + 4n^3 - 8 - 2n^3$

Degree: \_\_\_\_\_