

1. Write the expression in expanded form.

$$(5v + u)^7$$

A. $-5v + u^7$

B. $(5v + u) \cdot (5v + u) \cdot (5v + u) \cdot (5v + u) \cdot (5v + u) \cdot (5v + u) \cdot (5v + u)$

C. $(5v + u) \cdot (5v + u) \cdot (5v + u)$

D. $35v + u^7$

E. $5v + u + 5v + u + 5v + u + 5v + u + 5v + u + 5v + u + 5v + u$

F. $5v + u + 5v + u + 5v + u$

2. Simplify the expression.

$$\left[\left(\frac{2\theta^7 a^6}{9\theta^2 a^4} \right) \left(\frac{7\theta^8 a^9}{5\theta^4 a^2} \right) \right]^0 + \left[\left(\frac{9s^9 \gamma^7}{10z^2 a^4} \right) \left(\frac{5\gamma^7 q^9}{2a^4 x^3} \right) \right]^0$$

A. $\frac{14}{45}\theta^9 a^9$

B. $\frac{63}{80}\theta^9 a^{17}$

C. $\frac{63}{80}\theta^9 a^9$

D. 2

E. $\frac{14}{45}\theta^{13} a^{17}$

F. 1

G. $\frac{63}{80}\theta^{13} a^9$

H. 0

3. Simplify the expression.

$$\frac{6u^2s^3}{7u^5s^7}$$

A. $\frac{6u^3}{7s^4}$

B. $\frac{6}{7us^7}$

C. $\frac{6}{7u^7s^{10}}$

D. $\frac{6s^4}{7u^3}$

E. $\frac{6}{7u^3s^4}$

F. $\frac{6}{7}u^7s^{10}$

G. $\frac{6}{(7us)^7}$

H. $\frac{6}{7}u^3s^4$

4. Simplify the expression.

$$(q^{-2} \cdot q^3)^7$$

A. q^{21}

B. q^4

C. q^7

D. q^{13}

E. q^{-6}

F. q^{19}

G. q^{22}

H. q^{-11}

5. Simplify the expression.

$$\frac{(\gamma^7 \cdot p^{-8})^{-5} (\gamma^5 \cdot p^8)^{-2}}{(\gamma^{-6} \cdot p^4)^{-7}}$$

A. $\gamma^{-100} p^{39}$

B. $\gamma^{-107} p^{32}$

C. $\gamma^{-68} p^{71}$

D. $\gamma^{-99} p^{40}$

E. $\gamma^{-87} p^{52}$

F. $\gamma^{-89} p^{50}$

G. $\gamma^{-71} p^{68}$

H. $\gamma^{-67} p^{72}$

6. Add the polynomials.

$$(-3w^4 + 2w^3 + 6w^2 + 8) + (-6w^4 + 5w^3 + 9w^2 - 8w + 1)$$

A. $-9w^4 + 10w^3 + 15w^2 - 8w + 9$

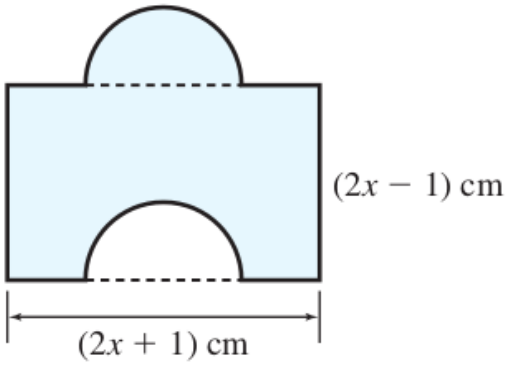
B. $-9w^4 + 7w^3 + 15w^2 - 8w + 9$

C. $-9w^4 + 7w^3 + 13w^2 - 8w + 9$

D. $-9w^4 + 7w^3 + 15w^2 - 8w + 6$

E. $-9w^4 + 7w^3 + 15w^2 - 3w + 9$

7. Write a polynomial for the area of the figure below.



- A. $4x^2 - 1$
- B. $4x^2 + 1$
- C. $4x^2 - 2x - 1$
- D. $2x^2 - 1$
- E. $4x^2 - x - 1$

8. Multiply the polynomials. $(-5\beta^2 - 3)(3\beta^2 - 9\beta)$

A. $-15\beta^4 + 45\beta^3 - 9\beta^2 + 27\beta - 3$

B. $-15\beta^4 + 40\beta^3 - 9\beta^2 + 27\beta$

C. $-15\beta^4 + 45\beta^3 - 9\beta^2 + 27\beta$

D. $-15\beta^4 + 45\beta^3 - 10\beta^2 + 27\beta$

E. $-15\beta^4 + 45\beta^3 - 9\beta^2 + 31\beta$

9. Expand the square.

$$(x^2 + 3)^2$$

A. $x^4 + 6$

B. $x^4 + 3x^2 + 9$

C. $x^2 + 6$

D. $x^4 + 6x^2 + 6$

E. $x^4 + 3x^2 + 6$

F. $x^2 + 9$

G. $x^4 + 9$

H. $x^4 + 6x^2 + 9$

10. Multiply the polynomials.

$$(5y + 4)(5y - 4)$$

A. $25y^2 - 16$

B. $25y^2 + 16$

C. $25y^2 + 40y - 16$

D. $25y^2 - 40y + 16$

E. $16y^2 - 25$

11. Factor out the GCF.

$$6b^4 + 20b^5 - 8b^3$$

A. $2b(3b^4 + 2b^2 - 1)$

B. $2b^3(4 + 2b - 3b^3)$

C. $b^4(2b^2 + 1 - 2b^2)$

D. $b^2(2b^5 + 4 - 2b^5)$

E. $2b^3(3b^4 + 4b^2 - 1)$

F. $b(3b^2 + 1 - 2b^3)$

G. $4b^4(4 + 2b^3 - 3b^5)$

H. $2b^3(3b + 10b^2 - 4)$

12. Factor the following quadratic polynomial.

$$\alpha^2 + 10\alpha + 12$$

A. $(\alpha + 2)(\alpha + 6)$

B. $(\alpha + 3)(\alpha - 4)$

C. $(\alpha + 1)(\alpha + 12)$

D. $(\alpha - 1)(\alpha - 12)$

E. $(\alpha + 3)(\alpha + 4)$

F. $(\alpha - 2)(\alpha + 6)$

G. Not factorable. This trinomial is prime.

H. $(\alpha - 2)(\alpha - 6)$

13. Factor the following quadratic polynomial.

$$40a^2 + 61a + 18$$

A. $(40a + 9)(a + 2)$

B. Not factorable. This trinomial is prime.

C. $(8a + 6)(5a + 3)$

D. $(8a + 1)(5a + 18)$

E. $(9a + 5)(2a + 6)$

F. $(4a + 6)(7a + 3)$

G. $(8a + 9)(5a + 2)$

H. $(4a + 9)(7a + 2)$

14. Factor the following quadratic polynomial.

$$4\phi^2 + 10\phi x + 5x^2$$

A. $(4\phi + x)(\phi - 5x)$

B. $(4\phi - x)(\phi - 5x)$

C. $(2\phi + x)(2\phi + 5x)$

D. $(2\phi - x)(2\phi - 5x)$

E. Not factorable. This trinomial is prime.

F. $(4\phi - x)(\phi + 5x)$

G. $(4\phi + x)(\phi + 5x)$

H. $(2\phi - x)(2\phi + 5x)$

15. Completely factor using the forms for perfect square trinomials.

$$9p^2 + 48p + 64$$

A. $(7p + 4)(5p + 9)$

B. $(3p + 4)(3p + 9)$

C. $(8p + 3)(8p + 4)$

D. $(3p + 1)(3p + 64)$

E. $(3p + 8)(3p + 8)$

F. Not factorable. This trinomial is prime.

G. $(9p + 8)(p + 8)$

H. $(7p + 8)(5p + 8)$

16. Factor the polynomial. $25 + 16\phi^2$

A. $(5\xi + 4)(5\phi + 4)$

B. $(25\xi + 4\phi)(5\xi - 16\phi)$

C. $(5\xi - 4)(5\phi + 4)$

D. $(4\xi - 3)(\xi - 6)$

E. $(5\xi - 4\phi)(5\xi - 4\phi)$

F. Not factorable.

G. $(5\xi + 4\phi)(5\xi + 4\phi)$

H. $(5\xi + 4\phi)(5\xi - 4\phi)$

17. Completely factor each polynomial using the strategy outlined in Section 6.5 in your textbook.

$$147\xi^3s - 75\xi s^3$$

A. $-3\xi s(7\xi + 5s)(7\xi - 5s)$

B. $3(7\xi - 5s)(7\xi^2 + 35\xi s + 7s^2)$

C. $3\xi^2s(7\xi + 5s)(7\xi + 5s)$

D. $3(7\xi + 5s)(7\xi^2 - 35\xi s + 7s^2)$

E. $3\xi s^2(7\xi - 5s)(7\xi - 5s)$

F. $3(7\xi - 5s)(7\xi^2 - 35\xi s + 7s^2)$

G. $3(7\xi + 5s)(7\xi^2 + 35\xi s + 7s^2)$

H. $3\xi s(7\xi + 5s)(7\xi - 5s)$

18. Factor the polynomial by grouping.

$$9r^2 - 4q^2 - 20q - 25$$

A. $[3r + (2q + 5)][3r - (2q + 5)]$

B. $(3r - 1)(2q + 5)$

C. $(3r - 1)(2q - 5)$

D. $(3r + 1)(2q - 5)$

E. $[3r - (2q + 5)][3r - (2q + 5)]$

F. $[3r + (2q + 5)][3r + (2q - 5)]$

G. $[3r + (2q + 5)][3r - (2q - 5)]$

H. $(3r + 1)(2q + 5)$

19. Solve the equation.

$$24c^2 + 41c - 35 = 0$$

A. $c = -\frac{5}{8}$ or $c = \frac{1}{2}$

B. $c = \frac{8}{7}$ or $c = -\frac{4}{5}$

C. $c = -\frac{8}{7}$ or $c = \frac{4}{5}$

D. $c = \frac{7}{3}$ or $c = -\frac{5}{8}$

E. $c = \frac{5}{8}$ or $c = -\frac{1}{2}$

F. $c = -\frac{7}{3}$ or $c = \frac{5}{8}$

G. $c = -\frac{4}{5}$ or $c = \frac{1}{2}$

H. $c = \frac{4}{5}$ or $c = -\frac{1}{2}$

20. Solve the equation.

$$3v^2 + 23v = -14$$

A. $v = -2$ or $v = -\frac{8}{5}$

B. $v = \frac{2}{3}$ or $v = \frac{5}{4}$

C. $v = 7$ or $v = \frac{2}{3}$

D. $v = 2$ or $v = \frac{8}{5}$

E. $v = -\frac{3}{7}$ or $v = -2$

F. $v = -\frac{2}{3}$ or $v = -\frac{5}{4}$

G. $v = \frac{3}{7}$ or $v = 2$

H. $v = -7$ or $v = -\frac{2}{3}$

Answers

1. B.
2. D.
3. E.
4. C.
5. E.
6. B.
7. A.
8. C.
9. H.
10. A.
11. H.
12. G.
13. G.
14. E.
15. E.
16. F.
17. H.
18. A.
19. F.
20. H.