

Simplifying Expressions (A)

Simplify each expression.

1. $u \cdot \left(-\frac{81u^3}{9u}\right)$

6. $b^2 \cdot \frac{2b^3}{2b}$

2. $v^2 \cdot \left(-\frac{4}{4}\right)$

7. $5x \cdot 6x \cdot x$

3. $-\frac{126z^3}{7z^2 \cdot 9}$

8. $-8 \cdot 5y \cdot y^2$

4. $-\frac{3b^2}{-b} \cdot (-9b^2)$

9. $\frac{81u^6}{-9u^2 \cdot 3u^2}$

5. $-\frac{16x^2}{-8x^2} \cdot x$

10. $-y \cdot \left(-\frac{2y}{-y}\right)$

Simplifying Expressions (A) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & u \cdot \left(-\frac{81u^3}{9u} \right) \\ & = -9u^3 \end{aligned}$$

$$\begin{aligned} 6. \quad & b^2 \cdot \frac{2b^3}{2b} \\ & = b^4 \end{aligned}$$

$$\begin{aligned} 2. \quad & v^2 \cdot \left(-\frac{4}{4} \right) \\ & = -v^2 \end{aligned}$$

$$\begin{aligned} 7. \quad & 5x \cdot 6x \cdot x \\ & = 30x^3 \end{aligned}$$

$$\begin{aligned} 3. \quad & -\frac{126z^3}{7z^2 \cdot 9} \\ & = -2z \end{aligned}$$

$$\begin{aligned} 8. \quad & -8 \cdot 5y \cdot y^2 \\ & = -40y^3 \end{aligned}$$

$$\begin{aligned} 4. \quad & -\frac{3b^2}{-b} \cdot (-9b^2) \\ & = -27b^3 \end{aligned}$$

$$\begin{aligned} 9. \quad & \frac{81u^6}{-9u^2 \cdot 3u^2} \\ & = -3u^2 \end{aligned}$$

$$\begin{aligned} 5. \quad & -\frac{16x^2}{-8x^2} \cdot x \\ & = 2x \end{aligned}$$

$$\begin{aligned} 10. \quad & -y \cdot \left(-\frac{2y}{-y} \right) \\ & = -2y \end{aligned}$$

Simplifying Expressions (B)

Simplify each expression.

1. $\frac{10c^3}{10c^2} \cdot 7c^2$

6. $-\frac{90y^3}{y \cdot 9}$

2. $z \cdot 10 \cdot 8$

7. $\frac{80u^4}{10 \cdot u^2}$

3. $y \cdot (-2) \cdot y$

8. $-1 \cdot 4x \cdot 6$

4. $-8u \cdot \left(-\frac{3u^3}{3u}\right)$

9. $-b \cdot \frac{10b}{10}$

5. $4y \cdot (-2y) \cdot (-5y)$

10. $3z^2 \cdot (-1) \cdot z^2$

Simplifying Expressions (B) Answers

Simplify each expression.

$$1. \frac{10c^3}{10c^2} \cdot 7c^2 \\ = 7c^3$$

$$6. -\frac{90y^3}{y \cdot 9} \\ = -10y^2$$

$$2. z \cdot 10 \cdot 8 \\ = 80z$$

$$7. \frac{80u^4}{10 \cdot u^2} \\ = 8u^2$$

$$3. y \cdot (-2) \cdot y \\ = -2y^2$$

$$8. -1 \cdot 4x \cdot 6 \\ = -24x$$

$$4. -8u \cdot \left(-\frac{3u^3}{3u}\right) \\ = 8u^3$$

$$9. -b \cdot \frac{10b}{10} \\ = -b^2$$

$$5. 4y \cdot (-2y) \cdot (-5y) \\ = 40y^3$$

$$10. 3z^2 \cdot (-1) \cdot z^2 \\ = -3z^4$$

Simplifying Expressions (C)

Simplify each expression.

1. $\frac{a^4}{a \cdot a}$

6. $5a \cdot a \cdot a^2$

2. $\frac{6z}{-z} \cdot (-9z^2)$

7. $x \cdot x \cdot 9x^2$

3. $6 \cdot (-c) \cdot (-c)$

8. $-3v^2 \cdot (-v) \cdot (-v)$

4. $-x^2 \cdot (-1) \cdot (-1)$

9. $6a \cdot (-1) \cdot 4a$

5. $5 \cdot 2v \cdot v^2$

10. $2 \cdot (-1) \cdot z^2$

Simplifying Expressions (C) Answers

Simplify each expression.

$$1. \frac{a^4}{a \cdot a} \\ = a^2$$

$$6. 5a \cdot a \cdot a^2 \\ = 5a^4$$

$$2. \frac{6z}{-z} \cdot (-9z^2) \\ = 54z^2$$

$$7. x \cdot x \cdot 9x^2 \\ = 9x^4$$

$$3. 6 \cdot (-c) \cdot (-c) \\ = 6c^2$$

$$8. -3v^2 \cdot (-v) \cdot (-v) \\ = -3v^4$$

$$4. -x^2 \cdot (-1) \cdot (-1) \\ = -x^2$$

$$9. 6a \cdot (-1) \cdot 4a \\ = -24a^2$$

$$5. 5 \cdot 2v \cdot v^2 \\ = 10v^3$$

$$10. 2 \cdot (-1) \cdot z^2 \\ = -2z^2$$

Simplifying Expressions (D)

Simplify each expression.

1. $-\frac{120x^4}{2x \cdot 10x}$

6. $\frac{8c^2}{-c} \cdot 4$

2. $2 \cdot \left(-\frac{6v^3}{-v^2}\right)$

7. $\frac{25a^4}{-5a \cdot a^2}$

3. $4 \cdot (-7b^2) \cdot (-6b^2)$

8. $\frac{10u^4}{10u^2} \cdot 9u$

4. $\frac{y^3}{y \cdot y}$

9. $\frac{4y^4}{4y^2} \cdot 8y^2$

5. $\frac{x^3}{-x} \cdot (-1)$

10. $-x \cdot (-3x^2) \cdot (-x)$

Simplifying Expressions (D) Answers

Simplify each expression.

$$1. -\frac{120x^4}{2x \cdot 10x} \\ = -6x^2$$

$$6. \frac{8c^2}{-c} \cdot 4 \\ = -32c$$

$$2. 2 \cdot \left(-\frac{6v^3}{-v^2} \right) \\ = 12v$$

$$7. \frac{25a^4}{-5a \cdot a^2} \\ = -5a$$

$$3. 4 \cdot (-7b^2) \cdot (-6b^2) \\ = 168b^4$$

$$8. \frac{10u^4}{10u^2} \cdot 9u \\ = 9u^3$$

$$4. \frac{y^3}{y \cdot y} \\ = y$$

$$9. \frac{4y^4}{4y^2} \cdot 8y^2 \\ = 8y^4$$

$$5. \frac{x^3}{-x} \cdot (-1) \\ = x^2$$

$$10. -x \cdot (-3x^2) \cdot (-x) \\ = -3x^4$$

Simplifying Expressions (E)

Simplify each expression.

1. $\frac{x^3}{x} \cdot (-5x^2)$

6. $\frac{2u^2}{u} \cdot u^2$

2. $\frac{4b}{-1} \cdot 4$

7. $b^2 \cdot b \cdot 10b^2$

3. $9z \cdot \left(-\frac{90z^2}{9z}\right)$

8. $-c \cdot \frac{12c^3}{-4c^2}$

4. $3x \cdot x \cdot (-5x)$

9. $-6 \cdot \frac{4x^3}{-x}$

5. $6y \cdot \frac{3y^2}{y}$

10. $\frac{35z^4}{7z^2 \cdot 5z}$

Simplifying Expressions (E) Answers

Simplify each expression.

$$\begin{aligned} 1. \frac{x^3}{x} \cdot (-5x^2) \\ = -5x^4 \end{aligned}$$

$$\begin{aligned} 6. \frac{2u^2}{u} \cdot u^2 \\ = 2u^3 \end{aligned}$$

$$\begin{aligned} 2. \frac{4b}{-1} \cdot 4 \\ = -16b \end{aligned}$$

$$\begin{aligned} 7. b^2 \cdot b \cdot 10b^2 \\ = 10b^5 \end{aligned}$$

$$\begin{aligned} 3. 9z \cdot \left(-\frac{90z^2}{9z} \right) \\ = -90z^2 \end{aligned}$$

$$\begin{aligned} 8. -c \cdot \frac{12c^3}{-4c^2} \\ = 3c^2 \end{aligned}$$

$$\begin{aligned} 4. 3x \cdot x \cdot (-5x) \\ = -15x^3 \end{aligned}$$

$$\begin{aligned} 9. -6 \cdot \frac{4x^3}{-x} \\ = 24x^2 \end{aligned}$$

$$\begin{aligned} 5. 6y \cdot \frac{3y^2}{y} \\ = 18y^2 \end{aligned}$$

$$\begin{aligned} 10. \frac{35z^4}{7z^2 \cdot 5z} \\ = z \end{aligned}$$

Simplifying Expressions (F)

Simplify each expression.

1. $\frac{8u^2}{-u^2} \cdot (-u^2)$

6. $-1 \cdot v \cdot v$

2. $\frac{4u^5}{u \cdot (-u^2)}$

7. $-\frac{35a^2}{5a} \cdot a$

3. $-\frac{4}{4} \cdot (-b^2)$

8. $v^2 \cdot v^2 \cdot v$

4. $x \cdot x \cdot 7x$

9. $u \cdot u \cdot (-7u)$

5. $a^2 \cdot \frac{a^3}{a}$

10. $-\frac{48u^2}{8} \cdot 7u^2$

Simplifying Expressions (F) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & \frac{8u^2}{-u^2} \cdot (-u^2) \\ & = 8u^2 \end{aligned}$$

$$\begin{aligned} 6. \quad & -1 \cdot v \cdot v \\ & = -v^2 \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{4u^5}{u \cdot (-u^2)} \\ & = -4u^2 \end{aligned}$$

$$\begin{aligned} 7. \quad & -\frac{35a^2}{5a} \cdot a \\ & = -7a^2 \end{aligned}$$

$$\begin{aligned} 3. \quad & -\frac{4}{4} \cdot (-b^2) \\ & = b^2 \end{aligned}$$

$$\begin{aligned} 8. \quad & v^2 \cdot v^2 \cdot v \\ & = v^5 \end{aligned}$$

$$\begin{aligned} 4. \quad & x \cdot x \cdot 7x \\ & = 7x^3 \end{aligned}$$

$$\begin{aligned} 9. \quad & u \cdot u \cdot (-7u) \\ & = -7u^3 \end{aligned}$$

$$\begin{aligned} 5. \quad & a^2 \cdot \frac{a^3}{a} \\ & = a^4 \end{aligned}$$

$$\begin{aligned} 10. \quad & -\frac{48u^2}{8} \cdot 7u^2 \\ & = -42u^4 \end{aligned}$$

Simplifying Expressions (G)

Simplify each expression.

1. $\frac{140c^4}{-7c \cdot (-5c)}$

6. $x^2 \cdot 4 \cdot 3x^2$

2. $-9 \cdot 6 \cdot (-a^2)$

7. $\frac{6u}{6u} \cdot u^2$

3. $-\frac{6a^2}{-6a^2} \cdot (-9a^2)$

8. $-\frac{9b^4}{b^2} \cdot (-b)$

4. $6x \cdot x^2 \cdot 7x$

9. $\frac{80a^5}{-10a^2 \cdot (-8a)}$

5. $2 \cdot a^2 \cdot (-a^2)$

10. $-9c^2 \cdot (-c^2) \cdot (-c)$

Simplifying Expressions (G) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & \frac{140c^4}{-7c \cdot (-5c)} \\ & = 4c^2 \end{aligned}$$

$$\begin{aligned} 6. \quad & x^2 \cdot 4 \cdot 3x^2 \\ & = 12x^4 \end{aligned}$$

$$\begin{aligned} 2. \quad & -9 \cdot 6 \cdot (-a^2) \\ & = 54a^2 \end{aligned}$$

$$\begin{aligned} 7. \quad & \frac{6u}{6u} \cdot u^2 \\ & = u^2 \end{aligned}$$

$$\begin{aligned} 3. \quad & -\frac{6a^2}{-6a^2} \cdot (-9a^2) \\ & = -9a^2 \end{aligned}$$

$$\begin{aligned} 8. \quad & -\frac{9b^4}{b^2} \cdot (-b) \\ & = 9b^3 \end{aligned}$$

$$\begin{aligned} 4. \quad & 6x \cdot x^2 \cdot 7x \\ & = 42x^4 \end{aligned}$$

$$\begin{aligned} 9. \quad & \frac{80a^5}{-10a^2 \cdot (-8a)} \\ & = a^2 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2 \cdot a^2 \cdot (-a^2) \\ & = -2a^4 \end{aligned}$$

$$\begin{aligned} 10. \quad & -9c^2 \cdot (-c^2) \cdot (-c) \\ & = -9c^5 \end{aligned}$$

Simplifying Expressions (H)

Simplify each expression.

1. $\frac{9u}{9} \cdot u$

6. $-\frac{60b^3}{-6 \cdot b^2}$

2. $\frac{144z^4}{6z \cdot (-3z)}$

7. $-y \cdot (-1) \cdot y^2$

3. $\frac{a^2}{a^2} \cdot 10a$

8. $-8b^2 \cdot \left(-\frac{9b^3}{-9b^2}\right)$

4. $x^2 \cdot (-5x) \cdot (-1)$

9. $-\frac{160v^4}{5 \cdot 4v^2}$

5. $b \cdot (-b) \cdot b$

10. $2 \cdot 2x \cdot (-x^2)$

Simplifying Expressions (H) Answers

Simplify each expression.

$$1. \frac{9u}{9} \cdot u \\ = u^2$$

$$6. -\frac{60b^3}{-6 \cdot b^2} \\ = 10b$$

$$2. \frac{144z^4}{6z \cdot (-3z)} \\ = -8z^2$$

$$7. -y \cdot (-1) \cdot y^2 \\ = y^3$$

$$3. \frac{a^2}{a^2} \cdot 10a \\ = 10a$$

$$8. -8b^2 \cdot \left(-\frac{9b^3}{-9b^2}\right) \\ = -8b^3$$

$$4. x^2 \cdot (-5x) \cdot (-1) \\ = 5x^3$$

$$9. -\frac{160v^4}{5 \cdot 4v^2} \\ = -8v^2$$

$$5. b \cdot (-b) \cdot b \\ = -b^3$$

$$10. 2 \cdot 2x \cdot (-x^2) \\ = -4x^3$$

Simplifying Expressions (I)

Simplify each expression.

1. $c^2 \cdot c^2 \cdot 5c$

6. $-a^2 \cdot (-1) \cdot a$

2. $-1 \cdot (-v) \cdot (-v^2)$

7. $3b \cdot 2b \cdot (-b)$

3. $7c \cdot \left(-\frac{2c^3}{-c^2}\right)$

8. $-\frac{2v^3}{2v} \cdot 2v$

4. $-\frac{504u^4}{8u \cdot 7u}$

9. $8x \cdot x \cdot x^2$

5. $2 \cdot \left(-\frac{10y^3}{-10y^2}\right)$

10. $7 \cdot \frac{y^4}{y^2}$

Simplifying Expressions (I) Answers

Simplify each expression.

$$1. c^2 \cdot c^2 \cdot 5c \\ = 5c^5$$

$$6. -a^2 \cdot (-1) \cdot a \\ = a^3$$

$$2. -1 \cdot (-v) \cdot (-v^2) \\ = -v^3$$

$$7. 3b \cdot 2b \cdot (-b) \\ = -6b^3$$

$$3. 7c \cdot \left(-\frac{2c^3}{-c^2} \right) \\ = 14c^2$$

$$8. -\frac{2v^3}{2v} \cdot 2v \\ = -2v^3$$

$$4. -\frac{504u^4}{8u \cdot 7u} \\ = -9u^2$$

$$9. 8x \cdot x \cdot x^2 \\ = 8x^4$$

$$5. 2 \cdot \left(-\frac{10y^3}{-10y^2} \right) \\ = 2y$$

$$10. 7 \cdot \frac{y^4}{y^2} \\ = 7y^2$$

Simplifying Expressions (J)

Simplify each expression.

1. $-v \cdot 3 \cdot (-4v^2)$

6. $\frac{4x^5}{4x^2 \cdot x}$

2. $-z^2 \cdot (-10z) \cdot 3z$

7. $-c \cdot c^2 \cdot c^2$

3. $-\frac{2y^2}{-2y} \cdot (-1)$

8. $7y^2 \cdot (-y^2) \cdot 2$

4. $-\frac{y}{-y} \cdot y^2$

9. $\frac{12c^6}{-4c^2 \cdot 3c^2}$

5. $z^2 \cdot z^2 \cdot z$

10. $-\frac{50u^4}{-5 \cdot u^2}$

Simplifying Expressions (J) Answers

Simplify each expression.

$$\begin{aligned} 1. & -v \cdot 3 \cdot (-4v^2) \\ & = 12v^3 \end{aligned}$$

$$\begin{aligned} 6. & \frac{4x^5}{4x^2 \cdot x} \\ & = x^2 \end{aligned}$$

$$\begin{aligned} 2. & -z^2 \cdot (-10z) \cdot 3z \\ & = 30z^4 \end{aligned}$$

$$\begin{aligned} 7. & -c \cdot c^2 \cdot c^2 \\ & = -c^5 \end{aligned}$$

$$\begin{aligned} 3. & -\frac{2y^2}{-2y} \cdot (-1) \\ & = -y \end{aligned}$$

$$\begin{aligned} 8. & 7y^2 \cdot (-y^2) \cdot 2 \\ & = -14y^4 \end{aligned}$$

$$\begin{aligned} 4. & -\frac{y}{-y} \cdot y^2 \\ & = y^2 \end{aligned}$$

$$\begin{aligned} 9. & \frac{12c^6}{-4c^2 \cdot 3c^2} \\ & = -c^2 \end{aligned}$$

$$\begin{aligned} 5. & z^2 \cdot z^2 \cdot z \\ & = z^5 \end{aligned}$$

$$\begin{aligned} 10. & -\frac{50u^4}{-5 \cdot u^2} \\ & = 10u^2 \end{aligned}$$