

Simplifying Expressions (A)

Simplify each expression.

1. $4cy \cdot y \cdot 10c \cdot 5y^2$

6. $a \cdot \frac{ax}{ax} \cdot 3$

2. $bv \cdot \left(-\frac{60v^3}{10v^2}\right) \cdot bv$

7. $a \cdot \left(-\frac{144a^3}{3a \cdot (-6)}\right)$

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

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

4. $\frac{9x^3z}{9xz \cdot x} \cdot x$

9. $\frac{140z^3}{2z \cdot 7z^2} \cdot 7x$

5. $10y \cdot vy \cdot \frac{y}{y}$

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

Simplifying Expressions (A) Answers

Simplify each expression.

$$\begin{aligned} 1. & 4cy \cdot y \cdot 10c \cdot 5y^2 \\ & = 200c^2y^4 \end{aligned}$$

$$\begin{aligned} 6. & a \cdot \frac{ax}{ax} \cdot 3 \\ & = 3a \end{aligned}$$

$$\begin{aligned} 2. & bv \cdot \left(-\frac{60v^3}{10v^2} \right) \cdot bv \\ & = -6b^2v^3 \end{aligned}$$

$$\begin{aligned} 7. & a \cdot \left(-\frac{144a^3}{3a \cdot (-6)} \right) \\ & = 8a^3 \end{aligned}$$

$$\begin{aligned} 3. & -8 \cdot 2 \cdot (-z^2) \cdot (-8) \\ & = -128z^2 \end{aligned}$$

$$\begin{aligned} 8. & \frac{b}{-1} \cdot b^2 \cdot 4b \\ & = -4b^4 \end{aligned}$$

$$\begin{aligned} 4. & \frac{9x^3z}{9xz \cdot x} \cdot x \\ & = x^2 \end{aligned}$$

$$\begin{aligned} 9. & \frac{140z^3}{2z \cdot 7z^2} \cdot 7x \\ & = 70x \end{aligned}$$

$$\begin{aligned} 5. & 10y \cdot vy \cdot \frac{y}{y} \\ & = 10vy^2 \end{aligned}$$

$$\begin{aligned} 10. & -3a^2 \cdot a^2 \cdot a \cdot (-a^2) \\ & = 3a^7 \end{aligned}$$

Simplifying Expressions (B)

Simplify each expression.

1. $u \cdot 4u \cdot (-a) \cdot u$

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

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

7. $-\frac{ac^2}{-c} \cdot 8c \cdot 5c^2$

3. $a \cdot (-1) \cdot 5 \cdot (-a)$

8. $-\frac{7a^2y}{ay} \cdot y \cdot (-6y)$

4. $-\frac{a^3v^3}{-v \cdot av \cdot v}$

9. $-b^2 \cdot by \cdot y \cdot 9b$

5. $-6vx \cdot \left(-\frac{v^2}{-v^2}\right) \cdot 7v^2$

10. $cx \cdot \frac{20x}{-4} \cdot 5$

Simplifying Expressions (B) Answers

Simplify each expression.

$$1. u \cdot 4u \cdot (-a) \cdot u \\ = -4au^3$$

$$6. -3u^2 \cdot \frac{u^2}{u^2} \cdot 9uz \\ = -27u^3z$$

$$2. by \cdot \frac{y}{-1} \cdot (-y^2) \\ = by^4$$

$$7. -\frac{ac^2}{-c} \cdot 8c \cdot 5c^2 \\ = 40ac^4$$

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

$$8. -\frac{7a^2y}{ay} \cdot y \cdot (-6y) \\ = 42ay^2$$

$$4. -\frac{a^3v^3}{-v \cdot av \cdot v} \\ = a^2$$

$$9. -b^2 \cdot by \cdot y \cdot 9b \\ = -9b^4y^2$$

$$5. -6vx \cdot \left(-\frac{v^2}{-v^2}\right) \cdot 7v^2 \\ = -42v^3x$$

$$10. cx \cdot \frac{20x}{-4} \cdot 5 \\ = -25cx^2$$

Simplifying Expressions (C)

Simplify each expression.

1. $c^2 \cdot cy \cdot \left(-\frac{35cy}{-5y}\right)$

6. $3vz \cdot vz \cdot (-v^2) \cdot (-vz)$

2. $-v \cdot u \cdot 7u \cdot uv$

7. $\frac{v^2}{v \cdot v} \cdot v^2$

3. $9u \cdot z^2 \cdot 6z \cdot u$

8. $9a \cdot \frac{18a^2}{-9a^2} \cdot 6a$

4. $c^2 \cdot (-c^2) \cdot \left(-\frac{c^2y}{cy}\right)$

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

5. $-8a \cdot (-6y^2) \cdot (-4y) \cdot y$

10. $-\frac{8cx^2}{-8cx} \cdot (-x) \cdot 2c$

Simplifying Expressions (C) Answers

Simplify each expression.

$$\begin{aligned} 1. c^2 \cdot cy \cdot \left(-\frac{35cy}{-5y}\right) \\ = 7c^4y \end{aligned}$$

$$\begin{aligned} 6. 3vz \cdot vz \cdot (-v^2) \cdot (-vz) \\ = 3v^5z^3 \end{aligned}$$

$$\begin{aligned} 2. -v \cdot u \cdot 7u \cdot uv \\ = -7u^3v^2 \end{aligned}$$

$$\begin{aligned} 7. \frac{v^2}{v \cdot v} \cdot v^2 \\ = v^2 \end{aligned}$$

$$\begin{aligned} 3. 9u \cdot z^2 \cdot 6z \cdot u \\ = 54u^2z^3 \end{aligned}$$

$$\begin{aligned} 8. 9a \cdot \frac{18a^2}{-9a^2} \cdot 6a \\ = -108a^2 \end{aligned}$$

$$\begin{aligned} 4. c^2 \cdot (-c^2) \cdot \left(-\frac{c^2y}{cy}\right) \\ = c^5 \end{aligned}$$

$$\begin{aligned} 9. c \cdot \left(-\frac{6cv^2}{cv \cdot (-v)}\right) \\ = 6c \end{aligned}$$

$$\begin{aligned} 5. -8a \cdot (-6y^2) \cdot (-4y) \cdot y \\ = -192ay^4 \end{aligned}$$

$$\begin{aligned} 10. -\frac{8cx^2}{-8cx} \cdot (-x) \cdot 2c \\ = -2cx^2 \end{aligned}$$

Simplifying Expressions (D)

Simplify each expression.

1. $-\frac{48bu^2}{3b \cdot 8 \cdot (-2)}$

6. $z \cdot (-10x) \cdot 8 \cdot 8x$

2. $x^2 \cdot (-ax) \cdot 3a^2 \cdot (-x)$

7. $-4 \cdot bx \cdot bx \cdot 10b^2$

3. $\frac{8u^2}{u^2} \cdot (-7z^2) \cdot 8z^2$

8. $-6uy \cdot (-10) \cdot 3y \cdot 7$

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

9. $-\frac{84v^2z^4}{-7vz \cdot (-2z) \cdot 6v}$

5. $y^2 \cdot 7uy \cdot \frac{6u^2}{-6u}$

10. $\frac{8vy}{8} \cdot 9vy \cdot (-3)$

Simplifying Expressions (D) Answers

Simplify each expression.

$$1. -\frac{48bu^2}{3b \cdot 8 \cdot (-2)} \\ = u^2$$

$$6. z \cdot (-10x) \cdot 8 \cdot 8x \\ = -640x^2z$$

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

$$7. -4 \cdot bx \cdot bx \cdot 10b^2 \\ = -40b^4x^2$$

$$3. \frac{8u^2}{u^2} \cdot (-7z^2) \cdot 8z^2 \\ = -448z^4$$

$$8. -6uy \cdot (-10) \cdot 3y \cdot 7 \\ = 1260uy^2$$

$$4. 8ab \cdot \frac{4a^4}{-4a^2} \cdot (-b) \\ = 8a^3b^2$$

$$9. -\frac{84v^2z^4}{-7vz \cdot (-2z) \cdot 6v} \\ = -z^2$$

$$5. y^2 \cdot 7uy \cdot \frac{6u^2}{-6u} \\ = -7u^2y^3$$

$$10. \frac{8vy}{8} \cdot 9vy \cdot (-3) \\ = -27v^2y^2$$

Simplifying Expressions (E)

Simplify each expression.

1. $x \cdot \left(-\frac{4cx^2}{-cx} \right) \cdot cx$

6. $ac \cdot (-ac) \cdot ac \cdot 2$

2. $\frac{168v^3z^2}{-8 \cdot 3v^2 \cdot v}$

7. $-\frac{6}{2} \cdot (-4z^2) \cdot 10$

3. $-\frac{36ax}{4} \cdot (-x) \cdot 2$

8. $-7c \cdot 5 \cdot 5 \cdot (-10c^2)$

4. $z^2 \cdot (-5) \cdot \frac{7}{7}$

9. $-7 \cdot (-b^2) \cdot \left(-\frac{b^3}{-b} \right)$

5. $-b^2 \cdot 9 \cdot v \cdot bv$

10. $-1 \cdot \frac{30a^2x^2}{-6a \cdot (-5x)}$

Simplifying Expressions (E) Answers

Simplify each expression.

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

$$\begin{aligned} 6. ac \cdot (-ac) \cdot ac \cdot 2 \\ = -2a^3c^3 \end{aligned}$$

$$\begin{aligned} 2. \frac{168v^3z^2}{-8 \cdot 3v^2 \cdot v} \\ = -7z^2 \end{aligned}$$

$$\begin{aligned} 7. -\frac{6}{2} \cdot (-4z^2) \cdot 10 \\ = 120z^2 \end{aligned}$$

$$\begin{aligned} 3. -\frac{36ax}{4} \cdot (-x) \cdot 2 \\ = 18ax^2 \end{aligned}$$

$$\begin{aligned} 8. -7c \cdot 5 \cdot 5 \cdot (-10c^2) \\ = 1750c^3 \end{aligned}$$

$$\begin{aligned} 4. z^2 \cdot (-5) \cdot \frac{7}{7} \\ = -5z^2 \end{aligned}$$

$$\begin{aligned} 9. -7 \cdot (-b^2) \cdot \left(-\frac{b^3}{-b} \right) \\ = 7b^4 \end{aligned}$$

$$\begin{aligned} 5. -b^2 \cdot 9 \cdot v \cdot bv \\ = -9b^3v^2 \end{aligned}$$

$$\begin{aligned} 10. -1 \cdot \frac{30a^2x^2}{-6a \cdot (-5x)} \\ = -ax \end{aligned}$$

Simplifying Expressions (F)

Simplify each expression.

1. $-\frac{120a}{-8a \cdot 5} \cdot 4a$

6. $-1 \cdot \frac{48c^2}{8c} \cdot c$

2. $-4 \cdot (-1) \cdot (-1) \cdot 7c^2$

7. $u \cdot 6x^2 \cdot 5u^2 \cdot 5x$

3. $9 \cdot \left(-\frac{2}{-2}\right) \cdot (-5a)$

8. $2a \cdot ab \cdot 9 \cdot (-ab)$

4. $-a \cdot 7 \cdot (-z) \cdot a$

9. $uy \cdot uy \cdot 8y^2 \cdot (-5u)$

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

10. $b \cdot 10b \cdot b \cdot b$

Simplifying Expressions (F) Answers

Simplify each expression.

$$1. -\frac{120a}{-8a \cdot 5} \cdot 4a \\ = 12a$$

$$6. -1 \cdot \frac{48c^2}{8c} \cdot c \\ = -6c^2$$

$$2. -4 \cdot (-1) \cdot (-1) \cdot 7c^2 \\ = -28c^2$$

$$7. u \cdot 6x^2 \cdot 5u^2 \cdot 5x \\ = 150u^3x^3$$

$$3. 9 \cdot \left(-\frac{2}{-2}\right) \cdot (-5a) \\ = -45a$$

$$8. 2a \cdot ab \cdot 9 \cdot (-ab) \\ = -18a^3b^2$$

$$4. -a \cdot 7 \cdot (-z) \cdot a \\ = 7a^2z$$

$$9. uy \cdot uy \cdot 8y^2 \cdot (-5u) \\ = -40u^3y^4$$

$$5. \frac{u^3x}{u \cdot ux} \cdot (-3) \\ = -3u$$

$$10. b \cdot 10b \cdot b \cdot b \\ = 10b^4$$

Simplifying Expressions (G)

Simplify each expression.

1. $cu \cdot 9cu \cdot (-c) \cdot cu$

6. $v \cdot v^2 \cdot 8v \cdot 5v$

2. $9ax \cdot \frac{2x}{2} \cdot x^2$

7. $-6y \cdot \frac{4a}{a} \cdot (-y)$

3. $\frac{56a^2v^3}{7v^2 \cdot 4v \cdot (-1)}$

8. $-u \cdot 8 \cdot ux \cdot u$

4. $-7v \cdot (-y) \cdot (-v) \cdot 9v$

9. $-\frac{240vx^2}{6vx \cdot 10x} \cdot vx$

5. $-2a \cdot (-3au) \cdot a \cdot au$

10. $-\frac{x^2}{-1} \cdot 8ax \cdot (-ax)$

Simplifying Expressions (G) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & cu \cdot 9cu \cdot (-c) \cdot cu \\ & = -9c^4u^3 \end{aligned}$$

$$\begin{aligned} 6. \quad & v \cdot v^2 \cdot 8v \cdot 5v \\ & = 40v^5 \end{aligned}$$

$$\begin{aligned} 2. \quad & 9ax \cdot \frac{2x}{2} \cdot x^2 \\ & = 9ax^4 \end{aligned}$$

$$\begin{aligned} 7. \quad & -6y \cdot \frac{4a}{a} \cdot (-y) \\ & = 24y^2 \end{aligned}$$

$$\begin{aligned} 3. \quad & \frac{56a^2v^3}{7v^2 \cdot 4v \cdot (-1)} \\ & = -2a^2 \end{aligned}$$

$$\begin{aligned} 8. \quad & -u \cdot 8 \cdot ux \cdot u \\ & = -8u^3x \end{aligned}$$

$$\begin{aligned} 4. \quad & -7v \cdot (-y) \cdot (-v) \cdot 9v \\ & = -63v^3y \end{aligned}$$

$$\begin{aligned} 9. \quad & -\frac{240vx^2}{6vx \cdot 10x} \cdot vx \\ & = -4vx \end{aligned}$$

$$\begin{aligned} 5. \quad & -2a \cdot (-3au) \cdot a \cdot au \\ & = 6a^4u^2 \end{aligned}$$

$$\begin{aligned} 10. \quad & -\frac{x^2}{-1} \cdot 8ax \cdot (-ax) \\ & = -8a^2x^4 \end{aligned}$$

Simplifying Expressions (H)

Simplify each expression.

1. $u \cdot (-1) \cdot (-1) \cdot u$

6. $-5 \cdot (-z^2) \cdot \frac{xz}{x}$

2. $-\frac{72c}{-9} \cdot 2c \cdot c$

7. $7 \cdot c \cdot y \cdot (-y)$

3. $-z^2 \cdot 9 \cdot z \cdot (-yz)$

8. $-\frac{63z^2}{-7z^2} \cdot 6z \cdot (-xz)$

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

9. $\frac{48}{-8 \cdot 3} \cdot (-6c)$

5. $-1 \cdot y \cdot y^2 \cdot (-1)$

10. $\frac{9b^2y}{by \cdot 9b} \cdot (-8b)$

Simplifying Expressions (H) Answers

Simplify each expression.

$$1. u \cdot (-1) \cdot (-1) \cdot u \\ = u^2$$

$$6. -5 \cdot (-z^2) \cdot \frac{xz}{x} \\ = 5z^3$$

$$2. -\frac{72c}{-9} \cdot 2c \cdot c \\ = 16c^3$$

$$7. 7 \cdot c \cdot y \cdot (-y) \\ = -7cy^2$$

$$3. -z^2 \cdot 9 \cdot z \cdot (-yz) \\ = 9yz^4$$

$$8. -\frac{63z^2}{-7z^2} \cdot 6z \cdot (-xz) \\ = -54xz^2$$

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

$$9. \frac{48}{-8 \cdot 3} \cdot (-6c) \\ = 12c$$

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

$$10. \frac{9b^2y}{by \cdot 9b} \cdot (-8b) \\ = -8b$$

Simplifying Expressions (I)

Simplify each expression.

1. $2x \cdot (-x) \cdot \left(-\frac{7x^4}{-7x^2}\right)$

6. $7a \cdot (-8a) \cdot \left(-\frac{6a^3}{-a}\right)$

2. $\frac{8cu^2}{u^2} \cdot 7cu \cdot 5u$

7. $-4x \cdot 6b^2 \cdot \left(-\frac{6x^2}{x^2}\right)$

3. $-1 \cdot \frac{v^2x}{x} \cdot (-9vx)$

8. $7cy \cdot 3 \cdot \left(-\frac{5cy}{-c}\right)$

4. $-1 \cdot \left(-\frac{3cv}{3cv}\right) \cdot (-v)$

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

5. $5 \cdot 7y \cdot \left(-\frac{3y}{3y}\right)$

10. $9b \cdot 7b \cdot (-5ab) \cdot 8a^2$

Simplifying Expressions (I) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 2x \cdot (-x) \cdot \left(-\frac{7x^4}{-7x^2} \right) \\ & = -2x^4 \end{aligned}$$

$$\begin{aligned} 6. \quad & 7a \cdot (-8a) \cdot \left(-\frac{6a^3}{-a} \right) \\ & = -336a^4 \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{8cu^2}{u^2} \cdot 7cu \cdot 5u \\ & = 280c^2u^2 \end{aligned}$$

$$\begin{aligned} 7. \quad & -4x \cdot 6b^2 \cdot \left(-\frac{6x^2}{x^2} \right) \\ & = 144b^2x \end{aligned}$$

$$\begin{aligned} 3. \quad & -1 \cdot \frac{v^2x}{x} \cdot (-9vx) \\ & = 9v^3x \end{aligned}$$

$$\begin{aligned} 8. \quad & 7cy \cdot 3 \cdot \left(-\frac{5cy}{-c} \right) \\ & = 105cy^2 \end{aligned}$$

$$\begin{aligned} 4. \quad & -1 \cdot \left(-\frac{3cv}{3cv} \right) \cdot (-v) \\ & = -v \end{aligned}$$

$$\begin{aligned} 9. \quad & -8av \cdot \left(-\frac{2av^2}{2v \cdot (-av)} \right) \\ & = -8av \end{aligned}$$

$$\begin{aligned} 5. \quad & 5 \cdot 7y \cdot \left(-\frac{3y}{3y} \right) \\ & = -35y \end{aligned}$$

$$\begin{aligned} 10. \quad & 9b \cdot 7b \cdot (-5ab) \cdot 8a^2 \\ & = -2520a^3b^3 \end{aligned}$$

Simplifying Expressions (J)

Simplify each expression.

1. $-x \cdot \left(-\frac{xy}{-x}\right) \cdot (-x)$

6. $-v \cdot uv \cdot (-7v) \cdot u^2$

2. $-c^2 \cdot c \cdot c \cdot 3c^2$

7. $7z \cdot (-x) \cdot z^2 \cdot xz$

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

8. $-u^2 \cdot \frac{8u^2v^2}{2v \cdot 4u}$

4. $\frac{z^2}{z \cdot (-1) \cdot (-1)}$

9. $-y \cdot \left(-\frac{54v^2y}{-9v^2}\right) \cdot y^2$

5. $u^2 \cdot (-u) \cdot 7u \cdot u$

10. $8 \cdot \frac{56u^2v}{7uv} \cdot u$

Simplifying Expressions (J) Answers

Simplify each expression.

$$1. -x \cdot \left(-\frac{xy}{-x} \right) \cdot (-x) \\ = x^2y$$

$$6. -v \cdot uv \cdot (-7v) \cdot u^2 \\ = 7u^3v^3$$

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

$$7. 7z \cdot (-x) \cdot z^2 \cdot xz \\ = -7x^2z^4$$

$$3. \frac{ab^2}{ab} \cdot (-2ab) \cdot 4ab \\ = -8a^2b^3$$

$$8. -u^2 \cdot \frac{8u^2v^2}{2v \cdot 4u} \\ = -u^3v$$

$$4. \frac{z^2}{z \cdot (-1) \cdot (-1)} \\ = z$$

$$9. -y \cdot \left(-\frac{54v^2y}{-9v^2} \right) \cdot y^2 \\ = -6y^4$$

$$5. u^2 \cdot (-u) \cdot 7u \cdot u \\ = -7u^5$$

$$10. 8 \cdot \frac{56u^2v}{7uv} \cdot u \\ = 64u^2$$