

Simplifying Expressions (A)

Simplify each expression.

1. $2x^2 - 10x^2 + 9x$

6. $-1 + 1 - c^2$

2. $7a^2 + 8a + 9a^2$

7. $2 + 8z^2 + 1$

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

8. $x^2 - x - x$

4. $-1 - a^2 - 4a^2$

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

5. $-x^2 - 1 - 5x^2$

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

Simplifying Expressions (A) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 2x^2 - 10x^2 + 9x \\ & = -8x^2 + 9x \end{aligned}$$

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

$$\begin{aligned} 2. \quad & 7a^2 + 8a + 9a^2 \\ & = 16a^2 + 8a \end{aligned}$$

$$\begin{aligned} 7. \quad & 2 + 8z^2 + 1 \\ & = 8z^2 + 3 \end{aligned}$$

$$\begin{aligned} 3. \quad & 5 \cdot 5x^2 \cdot (-5x) \\ & = -125x^3 \end{aligned}$$

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

$$\begin{aligned} 4. \quad & -1 - a^2 - 4a^2 \\ & = -5a^2 - 1 \end{aligned}$$

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

$$\begin{aligned} 5. \quad & -x^2 - 1 - 5x^2 \\ & = -6x^2 - 1 \end{aligned}$$

$$\begin{aligned} 10. \quad & -a \cdot \frac{7a^2}{a} \\ & = -7a^2 \end{aligned}$$

Simplifying Expressions (B)

Simplify each expression.

1. $\frac{y^3}{y^2} + y^2$

6. $-\frac{5b^3}{b} - b^2$

2. $3x - x^2 - 3x$

7. $-v \cdot \frac{60v^3}{-10v^2}$

3. $c + 9c - 10$

8. $-1 + \frac{30z^3}{6z}$

4. $4z^2 + 10z - 5z^2$

9. $-9c + c^2 - 6c$

5. $\frac{3v^2}{3v^2} + 9v$

10. $-\frac{b}{-1} + 2b$

Simplifying Expressions (B) Answers

Simplify each expression.

$$\begin{aligned} 1. \frac{y^3}{y^2} + y^2 \\ = y^2 + y \end{aligned}$$

$$\begin{aligned} 6. -\frac{5b^3}{b} - b^2 \\ = -6b^2 \end{aligned}$$

$$\begin{aligned} 2. 3x - x^2 - 3x \\ = -x^2 \end{aligned}$$

$$\begin{aligned} 7. -v \cdot \frac{60v^3}{-10v^2} \\ = 6v^2 \end{aligned}$$

$$\begin{aligned} 3. c + 9c - 10 \\ = 10c - 10 \end{aligned}$$

$$\begin{aligned} 8. -1 + \frac{30z^3}{6z} \\ = 5z^2 - 1 \end{aligned}$$

$$\begin{aligned} 4. 4z^2 + 10z - 5z^2 \\ = -z^2 + 10z \end{aligned}$$

$$\begin{aligned} 9. -9c + c^2 - 6c \\ = c^2 - 15c \end{aligned}$$

$$\begin{aligned} 5. \frac{3v^2}{3v^2} + 9v \\ = 9v + 1 \end{aligned}$$

$$\begin{aligned} 10. -\frac{b}{-1} + 2b \\ = 3b \end{aligned}$$

Simplifying Expressions (C)

Simplify each expression.

1. $8 \cdot \left(-\frac{5c^4}{-c^2} \right)$

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

2. $\frac{72v}{-9v} + 10v$

7. $b^2 + 8b + b$

3. $-v - v^2 - 4v^2$

8. $a - 1 + a$

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

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

5. $2u \cdot 8 + 8u^2$

10. $1 - 9x + 3x$

Simplifying Expressions (C) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 8 \cdot \left(-\frac{5c^4}{-c^2} \right) \\ & = 40c^2 \end{aligned}$$

$$\begin{aligned} 6. \quad & 9a - \frac{9a^2}{-9a} \\ & = 10a \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{72v}{-9v} + 10v \\ & = 10v - 8 \end{aligned}$$

$$\begin{aligned} 7. \quad & b^2 + 8b + b \\ & = b^2 + 9b \end{aligned}$$

$$\begin{aligned} 3. \quad & -v - v^2 - 4v^2 \\ & = -5v^2 - v \end{aligned}$$

$$\begin{aligned} 8. \quad & a - 1 + a \\ & = 2a - 1 \end{aligned}$$

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

$$\begin{aligned} 9. \quad & 9v \cdot \left(-\frac{8v^3}{-8v} \right) \\ & = 9v^3 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2u \cdot 8 + 8u^2 \\ & = 8u^2 + 16u \end{aligned}$$

$$\begin{aligned} 10. \quad & 1 - 9x + 3x \\ & = -6x + 1 \end{aligned}$$

Simplifying Expressions (D)

Simplify each expression.

1. $10c^2 + \frac{72}{8}$

6. $2b^2 + \frac{80b^2}{10b^2}$

2. $-y^2 + y^2 \cdot 9$

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

3. $1 - \frac{6x}{-6}$

8. $-1 + 5 - 4u$

4. $x + 3x + 9$

9. $-\frac{108z^2}{-6z \cdot 3}$

5. $\frac{8y^2}{8y^2} \cdot y^2$

10. $6v^2 + 5 + 1$

Simplifying Expressions (D) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 10c^2 + \frac{72}{8} \\ & = 10c^2 + 9 \end{aligned}$$

$$\begin{aligned} 6. \quad & 2b^2 + \frac{80b^2}{10b^2} \\ & = 2b^2 + 8 \end{aligned}$$

$$\begin{aligned} 2. \quad & -y^2 + y^2 \cdot 9 \\ & = 8y^2 \end{aligned}$$

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

$$\begin{aligned} 3. \quad & 1 - \frac{6x}{-6} \\ & = x + 1 \end{aligned}$$

$$\begin{aligned} 8. \quad & -1 + 5 - 4u \\ & = -4u + 4 \end{aligned}$$

$$\begin{aligned} 4. \quad & x + 3x + 9 \\ & = 4x + 9 \end{aligned}$$

$$\begin{aligned} 9. \quad & -\frac{108z^2}{-6z \cdot 3} \\ & = 6z \end{aligned}$$

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

$$\begin{aligned} 10. \quad & 6v^2 + 5 + 1 \\ & = 6v^2 + 6 \end{aligned}$$

Simplifying Expressions (E)

Simplify each expression.

1. $7 + 7c + 5$

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

2. $1 - 10z^2 + 8z^2$

7. $2a^2 - \frac{a^2}{a^2}$

3. $4a + 1 + 1$

8. $\frac{30c^4}{-6c \cdot (-c)}$

4. $-1 - u^2 + 1$

9. $-\frac{42v^2}{-7v} - 8$

5. $-9y^2 + 3 - 8y^2$

10. $-1 \cdot u \cdot 4u$

Simplifying Expressions (E) Answers

Simplify each expression.

$$1. \begin{aligned} 7 + 7c + 5 \\ = 7c + 12 \end{aligned}$$

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

$$2. \begin{aligned} 1 - 10z^2 + 8z^2 \\ = -2z^2 + 1 \end{aligned}$$

$$7. \begin{aligned} 2a^2 - \frac{a^2}{a^2} \\ = 2a^2 - 1 \end{aligned}$$

$$3. \begin{aligned} 4a + 1 + 1 \\ = 4a + 2 \end{aligned}$$

$$8. \begin{aligned} \frac{30c^4}{-6c \cdot (-c)} \\ = 5c^2 \end{aligned}$$

$$4. \begin{aligned} -1 - u^2 + 1 \\ = -u^2 \end{aligned}$$

$$9. \begin{aligned} \frac{42v^2}{-7v} - 8 \\ = 6v - 8 \end{aligned}$$

$$5. \begin{aligned} -9y^2 + 3 - 8y^2 \\ = -17y^2 + 3 \end{aligned}$$

$$10. \begin{aligned} -1 \cdot u \cdot 4u \\ = -4u^2 \end{aligned}$$

Simplifying Expressions (F)

Simplify each expression.

1. $3u^2 + 1 - 10u^2$

6. $3 + 1 + b^2$

2. $9y^2 + 1 + 1$

7. $-9u^2 + 1 + 4u^2$

3. $-\frac{c^2}{-1} + 10c$

8. $2v^2 + v^2 - v$

4. $6u - 10u - 1$

9. $-6 - v - 4v$

5. $-u^2 + \frac{12u^2}{3}$

10. $-\frac{15x}{-5x} \cdot x$

Simplifying Expressions (F) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 3u^2 + 1 - 10u^2 \\ & = -7u^2 + 1 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3 + 1 + b^2 \\ & = b^2 + 4 \end{aligned}$$

$$\begin{aligned} 2. \quad & 9y^2 + 1 + 1 \\ & = 9y^2 + 2 \end{aligned}$$

$$\begin{aligned} 7. \quad & -9u^2 + 1 + 4u^2 \\ & = -5u^2 + 1 \end{aligned}$$

$$\begin{aligned} 3. \quad & -\frac{c^2}{-1} + 10c \\ & = c^2 + 10c \end{aligned}$$

$$\begin{aligned} 8. \quad & 2v^2 + v^2 - v \\ & = 3v^2 - v \end{aligned}$$

$$\begin{aligned} 4. \quad & 6u - 10u - 1 \\ & = -4u - 1 \end{aligned}$$

$$\begin{aligned} 9. \quad & -6 - v - 4v \\ & = -5v - 6 \end{aligned}$$

$$\begin{aligned} 5. \quad & -u^2 + \frac{12u^2}{3} \\ & = 3u^2 \end{aligned}$$

$$\begin{aligned} 10. \quad & -\frac{15x}{-5x} \cdot x \\ & = 3x \end{aligned}$$

Simplifying Expressions (G)

Simplify each expression.

1. $5c^2 - \frac{10c}{10}$

6. $-6a^2 \cdot a \cdot 8a$

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

7. $9a^2 + 3a^2 + a$

3. $-\frac{z}{-1} \cdot z^2$

8. $\frac{z^3}{z} + 10z^2$

4. $-1 + 8v + v$

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

5. $9a^2 \cdot \left(-\frac{8a^3}{-8a}\right)$

10. $a^2 \cdot 3a \cdot 7$

Simplifying Expressions (G) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 5c^2 - \frac{10c}{10} \\ & = 5c^2 - c \end{aligned}$$

$$\begin{aligned} 6. \quad & -6a^2 \cdot a \cdot 8a \\ & = -48a^4 \end{aligned}$$

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

$$\begin{aligned} 7. \quad & 9a^2 + 3a^2 + a \\ & = 12a^2 + a \end{aligned}$$

$$\begin{aligned} 3. \quad & -\frac{z}{-1} \cdot z^2 \\ & = z^3 \end{aligned}$$

$$\begin{aligned} 8. \quad & \frac{z^3}{z} + 10z^2 \\ & = 11z^2 \end{aligned}$$

$$\begin{aligned} 4. \quad & -1 + 8v + v \\ & = 9v - 1 \end{aligned}$$

$$\begin{aligned} 9. \quad & -\frac{y^4}{-y^2} - 4y \\ & = y^2 - 4y \end{aligned}$$

$$\begin{aligned} 5. \quad & 9a^2 \cdot \left(-\frac{8a^3}{-8a}\right) \\ & = 9a^4 \end{aligned}$$

$$\begin{aligned} 10. \quad & a^2 \cdot 3a \cdot 7 \\ & = 21a^3 \end{aligned}$$

Simplifying Expressions (H)

Simplify each expression.

1. $3y + 6y + y^2$

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

2. $2 - y - 6y$

7. $z^2 + z^2 + 1$

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

8. $8u^2 + 1 + 7u^2$

4. $-\frac{u}{-1} + u$

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

5. $-10b^2 - 2 - 1$

10. $a^2 \cdot (-a) \cdot 7a^2$

Simplifying Expressions (H) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 3y + 6y + y^2 \\ & = y^2 + 9y \end{aligned}$$

$$\begin{aligned} 6. \quad & c^2 \cdot (-9c) \cdot c^2 \\ & = -9c^5 \end{aligned}$$

$$\begin{aligned} 2. \quad & 2 - y - 6y \\ & = -7y + 2 \end{aligned}$$

$$\begin{aligned} 7. \quad & z^2 + z^2 + 1 \\ & = 2z^2 + 1 \end{aligned}$$

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

$$\begin{aligned} 8. \quad & 8u^2 + 1 + 7u^2 \\ & = 15u^2 + 1 \end{aligned}$$

$$\begin{aligned} 4. \quad & -\frac{u}{-1} + u \\ & = 2u \end{aligned}$$

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

$$\begin{aligned} 5. \quad & -10b^2 - 2 - 1 \\ & = -10b^2 - 3 \end{aligned}$$

$$\begin{aligned} 10. \quad & a^2 \cdot (-a) \cdot 7a^2 \\ & = -7a^5 \end{aligned}$$

Simplifying Expressions (I)

Simplify each expression.

1. $b \cdot (-1) \cdot 3b^2$

6. $v^2 \cdot v^2 \cdot 9$

2. $v^2 + 3v \cdot 8v^2$

7. $1 + v^2 + 1$

3. $c + \frac{42c^2}{7c^2}$

8. $-\frac{3}{3} + a$

4. $-1 + \frac{6c^3}{6c}$

9. $-4u^2 - 1 + 9u^2$

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

10. $-\frac{3z^2}{3z^2} + 4z$

Simplifying Expressions (I) Answers

Simplify each expression.

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

$$\begin{aligned} 6. & v^2 \cdot v^2 \cdot 9 \\ & = 9v^4 \end{aligned}$$

$$\begin{aligned} 2. & v^2 + 3v \cdot 8v^2 \\ & = 24v^3 + v^2 \end{aligned}$$

$$\begin{aligned} 7. & 1 + v^2 + 1 \\ & = v^2 + 2 \end{aligned}$$

$$\begin{aligned} 3. & c + \frac{42c^2}{7c^2} \\ & = c + 6 \end{aligned}$$

$$\begin{aligned} 8. & -\frac{3}{3} + a \\ & = a - 1 \end{aligned}$$

$$\begin{aligned} 4. & -1 + \frac{6c^3}{6c} \\ & = c^2 - 1 \end{aligned}$$

$$\begin{aligned} 9. & -4u^2 - 1 + 9u^2 \\ & = 5u^2 - 1 \end{aligned}$$

$$\begin{aligned} 5. & \frac{3y^3}{3y} + 6y^2 \\ & = 7y^2 \end{aligned}$$

$$\begin{aligned} 10. & -\frac{3z^2}{3z^2} + 4z \\ & = 4z - 1 \end{aligned}$$

Simplifying Expressions (J)

Simplify each expression.

1. $z - 5z + z$

6. $3 \cdot z^2 \cdot (-z^2)$

2. $10 - b \cdot 9b$

7. $-1 - y + 5$

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

8. $6c^2 - 9c - c$

4. $\frac{9x}{3} + 3x^2$

9. $1 + 7z^2 + z^2$

5. $b^2 \cdot \frac{49b^4}{7b^2}$

10. $7v^2 + v \cdot v^2$

Simplifying Expressions (J) Answers

Simplify each expression.

$$\begin{aligned} 1. z - 5z + z \\ = -3z \end{aligned}$$

$$\begin{aligned} 6. 3 \cdot z^2 \cdot (-z^2) \\ = -3z^4 \end{aligned}$$

$$\begin{aligned} 2. 10 - b \cdot 9b \\ = -9b^2 + 10 \end{aligned}$$

$$\begin{aligned} 7. -1 - y + 5 \\ = -y + 4 \end{aligned}$$

$$\begin{aligned} 3. 8a^2 \cdot \left(-\frac{a^3}{a^2}\right) \\ = -8a^3 \end{aligned}$$

$$\begin{aligned} 8. 6c^2 - 9c - c \\ = 6c^2 - 10c \end{aligned}$$

$$\begin{aligned} 4. \frac{9x}{3} + 3x^2 \\ = 3x^2 + 3x \end{aligned}$$

$$\begin{aligned} 9. 1 + 7z^2 + z^2 \\ = 8z^2 + 1 \end{aligned}$$

$$\begin{aligned} 5. b^2 \cdot \frac{49b^4}{7b^2} \\ = 7b^4 \end{aligned}$$

$$\begin{aligned} 10. 7v^2 + v \cdot v^2 \\ = v^3 + 7v^2 \end{aligned}$$