

Simplifying Expressions (A)

Simplify each expression.

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

6. $3v^2 + 6z + 4 - vz + vz$

2. $5 - 2au + 1 - u + u$

7. $4y^2 - y + y^2 + 6y^2 - 1$

3. $-x^2 + 2 - 1 + 6x^2 - 4x^2$

8. $6 + 2au + 6a^2 + 1 + 4au$

4. $3u - 4 - 1 + 1 - 4uy$

9. $-1 + 3x + 3x^2 + x^2 + 6x^2$

5. $3y^2 + uy - u + 3y + 5uy$

10. $-1 - 1 - 3 + 4cy - cy$

Simplifying Expressions (A) Answers

Simplify each expression.

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

$$\begin{aligned} 6. & 3v^2 + 6z + 4 - vz + vz \\ & = 3v^2 + 6z + 4 \end{aligned}$$

$$\begin{aligned} 2. & 5 - 2au + 1 - u + u \\ & = -2au + 6 \end{aligned}$$

$$\begin{aligned} 7. & 4y^2 - y + y^2 + 6y^2 - 1 \\ & = 11y^2 - y - 1 \end{aligned}$$

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

$$\begin{aligned} 8. & 6 + 2au + 6a^2 + 1 + 4au \\ & = 6au + 6a^2 + 7 \end{aligned}$$

$$\begin{aligned} 4. & 3u - 4 - 1 + 1 - 4uy \\ & = -4uy + 3u - 4 \end{aligned}$$

$$\begin{aligned} 9. & -1 + 3x + 3x^2 + x^2 + 6x^2 \\ & = 10x^2 + 3x - 1 \end{aligned}$$

$$\begin{aligned} 5. & 3y^2 + uy - u + 3y + 5uy \\ & = 3y^2 + 6uy - u + 3y \end{aligned}$$

$$\begin{aligned} 10. & -1 - 1 - 3 + 4cy - cy \\ & = 3cy - 5 \end{aligned}$$

Simplifying Expressions (B)

Simplify each expression.

1. $-3a^2 - 3 + c + a^2 - 5a$

6. $bx - x + 5 + 5 + bx$

2. $-3a + 2x^2 - 1 + a^2 - 1$

7. $-1 - 1 + 5z^2 + z^2 + 5a$

3. $5u^2 + 1 + 1 + 5uv + 1$

8. $6 + cv + 1 - 6v + 6$

4. $a + a - ay + 3y + 4$

9. $3uz - 4 - 2z - 1 + 5z$

5. $1 + z - z + 4 + z$

10. $y^2 - 6yz + y - 1 + 1$

Simplifying Expressions (B) Answers

Simplify each expression.

$$\begin{aligned} 1. & -3a^2 - 3 + c + a^2 - 5a \\ & = -2a^2 + c - 5a - 3 \end{aligned}$$

$$\begin{aligned} 6. & bx - x + 5 + 5 + bx \\ & = 2bx - x + 10 \end{aligned}$$

$$\begin{aligned} 2. & -3a + 2x^2 - 1 + a^2 - 1 \\ & = 2x^2 + a^2 - 3a - 2 \end{aligned}$$

$$\begin{aligned} 7. & -1 - 1 + 5z^2 + z^2 + 5a \\ & = 6z^2 + 5a - 2 \end{aligned}$$

$$\begin{aligned} 3. & 5u^2 + 1 + 1 + 5uv + 1 \\ & = 5u^2 + 5uv + 3 \end{aligned}$$

$$\begin{aligned} 8. & 6 + cv + 1 - 6v + 6 \\ & = cv - 6v + 13 \end{aligned}$$

$$\begin{aligned} 4. & a + a - ay + 3y + 4 \\ & = -ay + 2a + 3y + 4 \end{aligned}$$

$$\begin{aligned} 9. & 3uz - 4 - 2z - 1 + 5z \\ & = 3uz + 3z - 5 \end{aligned}$$

$$\begin{aligned} 5. & 1 + z - z + 4 + z \\ & = z + 5 \end{aligned}$$

$$\begin{aligned} 10. & y^2 - 6yz + y - 1 + 1 \\ & = y^2 - 6yz + y \end{aligned}$$

Simplifying Expressions (C)

Simplify each expression.

1. $1 + bx + bx - 1 + x^2$

6. $-az + z - z^2 + 3z + z$

2. $-x + v^2 + v^2 - 1 - 1$

7. $y + c + 1 - y - y$

3. $-2 + u - uy - 1 + 3$

8. $6 + 6 + z - 4uz - 1$

4. $1 + 1 + b - 1 + 5ab$

9. $a^2 - x + 3x^2 + 6x^2 - 1$

5. $-2v^2 + 1 + 1 - v - v$

10. $-1 - 2 + c - 4c - 4c$

Simplifying Expressions (C) Answers

Simplify each expression.

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

$$\begin{aligned} 6. \quad & -az + z - z^2 + 3z + z \\ & = -az - z^2 + 5z \end{aligned}$$

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

$$\begin{aligned} 7. \quad & y + c + 1 - y - y \\ & = -y + c + 1 \end{aligned}$$

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

$$\begin{aligned} 8. \quad & 6 + 6 + z - 4uz - 1 \\ & = -4uz + z + 11 \end{aligned}$$

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

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

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

$$\begin{aligned} 10. \quad & -1 - 2 + c - 4c - 4c \\ & = -7c - 3 \end{aligned}$$

Simplifying Expressions (D)

Simplify each expression.

1. $1 + xz + 4 + 6 + z$

6. $-1 - cv + v - v + 3$

2. $uv + 1 + v + 2uv - 1$

7. $z^2 + 1 + 6 + 2z - 4z$

3. $vy + 3v - 5 - y + vy$

8. $2cv - 1 + 2cv + 3c^2 + 2cv$

4. $4z + 5 + 1 - yz + 1$

9. $4cx + cx - cx - cx + cx$

5. $-1 + 3 + a^2 + 1 - a$

10. $4u + 2y^2 + 4u^2 + 4y + u^2$

Simplifying Expressions (D) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 1 + xz + 4 + 6 + z \\ & = xz + z + 11 \end{aligned}$$

$$\begin{aligned} 6. \quad & -1 - cv + v - v + 3 \\ & = -cv + 2 \end{aligned}$$

$$\begin{aligned} 2. \quad & uv + 1 + v + 2uv - 1 \\ & = 3uv + v \end{aligned}$$

$$\begin{aligned} 7. \quad & z^2 + 1 + 6 + 2z - 4z \\ & = z^2 - 2z + 7 \end{aligned}$$

$$\begin{aligned} 3. \quad & vy + 3v - 5 - y + vy \\ & = 2vy + 3v - y - 5 \end{aligned}$$

$$\begin{aligned} 8. \quad & 2cv - 1 + 2cv + 3c^2 + 2cv \\ & = 6cv + 3c^2 - 1 \end{aligned}$$

$$\begin{aligned} 4. \quad & 4z + 5 + 1 - yz + 1 \\ & = -yz + 4z + 7 \end{aligned}$$

$$\begin{aligned} 9. \quad & 4cx + cx - cx - cx + cx \\ & = 4cx \end{aligned}$$

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

$$\begin{aligned} 10. \quad & 4u + 2y^2 + 4u^2 + 4y + u^2 \\ & = 2y^2 + 5u^2 + 4u + 4y \end{aligned}$$

Simplifying Expressions (E)

Simplify each expression.

1. $z + 3 + z^2 + 3z^2 + 4z^2$

6. $2 + uy + 4y + 1 + u$

2. $5 + av + 1 + av + a$

7. $5a - 3 - 5a^2 + 3a^2 - 1$

3. $b - x^2 + 1 + 1 + 2b^2$

8. $-3b + 2 - 6z + 1 - b$

4. $2z^2 + 6v + 5v + z - v$

9. $3cy + c + 6c^2 + 4c - 6y^2$

5. $5a + 2 + a - 1 + 5a^2$

10. $u + v - 1 + 6uv - 2v$

Simplifying Expressions (E) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & z + 3 + z^2 + 3z^2 + 4z^2 \\ & = 8z^2 + z + 3 \end{aligned}$$

$$\begin{aligned} 6. \quad & 2 + uy + 4y + 1 + u \\ & = uy + 4y + u + 3 \end{aligned}$$

$$\begin{aligned} 2. \quad & 5 + av + 1 + av + a \\ & = 2av + a + 6 \end{aligned}$$

$$\begin{aligned} 7. \quad & 5a - 3 - 5a^2 + 3a^2 - 1 \\ & = -2a^2 + 5a - 4 \end{aligned}$$

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

$$\begin{aligned} 8. \quad & -3b + 2 - 6z + 1 - b \\ & = -4b - 6z + 3 \end{aligned}$$

$$\begin{aligned} 4. \quad & 2z^2 + 6v + 5v + z - v \\ & = 2z^2 + 10v + z \end{aligned}$$

$$\begin{aligned} 9. \quad & 3cy + c + 6c^2 + 4c - 6y^2 \\ & = 3cy + 6c^2 - 6y^2 + 5c \end{aligned}$$

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

$$\begin{aligned} 10. \quad & u + v - 1 + 6uv - 2v \\ & = 6uv + u - v - 1 \end{aligned}$$

Simplifying Expressions (F)

Simplify each expression.

1. $a^2 + a + 1 + 6 - v$

6. $-4c + bc + 4 + 6 + b$

2. $-ux + 1 + 2u^2 + 2x^2 + 1$

7. $-1 - v - 1 + 6v - 1$

3. $1 + 6y^2 + 1 + 5y + 6cy$

8. $4 + bx + b + x - 1$

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

9. $-c^2 - bc + 4c + 6b - bc$

5. $uy + 1 + 4y + y - u^2$

10. $1 + 6 + 3vx + 2x + 1$

Simplifying Expressions (F) Answers

Simplify each expression.

$$\begin{aligned} 1. & a^2 + a + 1 + 6 - v \\ & = a^2 + a - v + 7 \end{aligned}$$

$$\begin{aligned} 6. & -4c + bc + 4 + 6 + b \\ & = bc - 4c + b + 10 \end{aligned}$$

$$\begin{aligned} 2. & -ux + 1 + 2u^2 + 2x^2 + 1 \\ & = -ux + 2u^2 + 2x^2 + 2 \end{aligned}$$

$$\begin{aligned} 7. & -1 - v - 1 + 6v - 1 \\ & = 5v - 3 \end{aligned}$$

$$\begin{aligned} 3. & 1 + 6y^2 + 1 + 5y + 6cy \\ & = 6y^2 + 6cy + 5y + 2 \end{aligned}$$

$$\begin{aligned} 8. & 4 + bx + b + x - 1 \\ & = bx + b + x + 3 \end{aligned}$$

$$\begin{aligned} 4. & 1 + 1 + 4 - v^2 + 1 \\ & = -v^2 + 7 \end{aligned}$$

$$\begin{aligned} 9. & -c^2 - bc + 4c + 6b - bc \\ & = -c^2 - 2bc + 4c + 6b \end{aligned}$$

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

$$\begin{aligned} 10. & 1 + 6 + 3vx + 2x + 1 \\ & = 3vx + 2x + 8 \end{aligned}$$

Simplifying Expressions (G)

Simplify each expression.

1. $-2a - 1 - 1 + 1 + 2$

6. $v^2 - u + 6u + 6v^2 - 1$

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

7. $-1 + y^2 + 5 - ay + ay$

3. $-u + u - 5u^2 + u + 1$

8. $-5cy + 5 + 1 + 3 - 5y^2$

4. $5cy - 5 - 5c + 1 + 5$

9. $1 + 1 + cz + 1 + z$

5. $-z + 5b^2 + b - 6b^2 - 4bz$

10. $-5 + a + y + y + y$

Simplifying Expressions (G) Answers

Simplify each expression.

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

$$\begin{aligned} 6. & v^2 - u + 6u + 6v^2 - 1 \\ & = 7v^2 + 5u - 1 \end{aligned}$$

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

$$\begin{aligned} 7. & -1 + y^2 + 5 - ay + ay \\ & = y^2 + 4 \end{aligned}$$

$$\begin{aligned} 3. & -u + u - 5u^2 + u + 1 \\ & = -5u^2 + u + 1 \end{aligned}$$

$$\begin{aligned} 8. & -5cy + 5 + 1 + 3 - 5y^2 \\ & = -5cy - 5y^2 + 9 \end{aligned}$$

$$\begin{aligned} 4. & 5cy - 5 - 5c + 1 + 5 \\ & = 5cy - 5c + 1 \end{aligned}$$

$$\begin{aligned} 9. & 1 + 1 + cz + 1 + z \\ & = cz + z + 3 \end{aligned}$$

$$\begin{aligned} 5. & -z + 5b^2 + b - 6b^2 - 4bz \\ & = -b^2 - 4bz - z + b \end{aligned}$$

$$\begin{aligned} 10. & -5 + a + y + y + y \\ & = a + 3y - 5 \end{aligned}$$

Simplifying Expressions (H)

Simplify each expression.

1. $3cy + c^2 + 1 + y - c^2$

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

2. $-1 + 6 + 6x + a^2 + a$

7. $-5u^2 + 1 + c^2 + 1 + c$

3. $-1 - 2x - 2y - x + 3$

8. $3vz + 3v - 2vz - z + 4vz$

4. $y + 4cy - 4c - c + 2y^2$

9. $-y + xy + 5xy + 5x + 3xy$

5. $1 + cx - x + 2 + 4$

10. $4ux - ux + 4 + ux - x$

Simplifying Expressions (H) Answers

Simplify each expression.

$$\begin{aligned} 1. & 3cy + c^2 + 1 + y - c^2 \\ & = 3cy + y + 1 \end{aligned}$$

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

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

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

$$\begin{aligned} 3. & -1 - 2x - 2y - x + 3 \\ & = -3x - 2y + 2 \end{aligned}$$

$$\begin{aligned} 8. & 3vz + 3v - 2vz - z + 4vz \\ & = 5vz + 3v - z \end{aligned}$$

$$\begin{aligned} 4. & y + 4cy - 4c - c + 2y^2 \\ & = 4cy + 2y^2 + y - 5c \end{aligned}$$

$$\begin{aligned} 9. & -y + xy + 5xy + 5x + 3xy \\ & = 9xy - y + 5x \end{aligned}$$

$$\begin{aligned} 5. & 1 + cx - x + 2 + 4 \\ & = cx - x + 7 \end{aligned}$$

$$\begin{aligned} 10. & 4ux - ux + 4 + ux - x \\ & = 4ux - x + 4 \end{aligned}$$

Simplifying Expressions (I)

Simplify each expression.

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

6. $b - 1 + 3 - 6 + x$

2. $-v + a^2 - 4v + v + 6$

7. $-4uz - 3 - 4uz - z + 1$

3. $-a - 6ax - 4x + 4x^2 + 6x$

8. $1 + 1 + 6z + 3 + z^2$

4. $-5c + c^2 + c - 1 - 1$

9. $6z + 1 + az + 1 + a^2$

5. $5z + 5z + vz - 1 + 4$

10. $-6 + 5 + cy + 5y - cy$

Simplifying Expressions (I) Answers

Simplify each expression.

$$\begin{aligned} 1. \quad & 6 + u^2 + 6 - u + u \\ & = u^2 + 12 \end{aligned}$$

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

$$\begin{aligned} 2. \quad & -v + a^2 - 4v + v + 6 \\ & = a^2 - 4v + 6 \end{aligned}$$

$$\begin{aligned} 7. \quad & -4uz - 3 - 4uz - z + 1 \\ & = -8uz - z - 2 \end{aligned}$$

$$\begin{aligned} 3. \quad & -a - 6ax - 4x + 4x^2 + 6x \\ & = -6ax + 4x^2 - a + 2x \end{aligned}$$

$$\begin{aligned} 8. \quad & 1 + 1 + 6z + 3 + z^2 \\ & = z^2 + 6z + 5 \end{aligned}$$

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

$$\begin{aligned} 9. \quad & 6z + 1 + az + 1 + a^2 \\ & = az + a^2 + 6z + 2 \end{aligned}$$

$$\begin{aligned} 5. \quad & 5z + 5z + vz - 1 + 4 \\ & = vz + 10z + 3 \end{aligned}$$

$$\begin{aligned} 10. \quad & -6 + 5 + cy + 5y - cy \\ & = 5y - 1 \end{aligned}$$

Simplifying Expressions (J)

Simplify each expression.

1. $-1 + 2 + a^2 - 3a + ac$

6. $-x + b - b^2 - 1 + 1$

2. $3x + 1 + bx - bx + 1$

7. $y + 4 - y + 4y^2 + 6y^2$

3. $6vz - z^2 + vz + 2v^2 + v$

8. $6a^2 - 6u^2 + 1 + u^2 + 4u$

4. $-1 + z^2 - v + z + 2$

9. $2bv + 4v^2 + 6 - 2v + bv$

5. $-1 + 1 - 6y + 2yz + 4z$

10. $1 - v - 6x + v + 1$

Simplifying Expressions (J) Answers

Simplify each expression.

$$\begin{aligned} 1. & -1 + 2 + a^2 - 3a + ac \\ & = a^2 + ac - 3a + 1 \end{aligned}$$

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

$$\begin{aligned} 2. & 3x + 1 + bx - bx + 1 \\ & = 3x + 2 \end{aligned}$$

$$\begin{aligned} 7. & y + 4 - y + 4y^2 + 6y^2 \\ & = 10y^2 + 4 \end{aligned}$$

$$\begin{aligned} 3. & 6vz - z^2 + vz + 2v^2 + v \\ & = 7vz - z^2 + 2v^2 + v \end{aligned}$$

$$\begin{aligned} 8. & 6a^2 - 6u^2 + 1 + u^2 + 4u \\ & = 6a^2 - 5u^2 + 4u + 1 \end{aligned}$$

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

$$\begin{aligned} 9. & 2bv + 4v^2 + 6 - 2v + bv \\ & = 3bv + 4v^2 - 2v + 6 \end{aligned}$$

$$\begin{aligned} 5. & -1 + 1 - 6y + 2yz + 4z \\ & = 2yz - 6y + 4z \end{aligned}$$

$$\begin{aligned} 10. & 1 - v - 6x + v + 1 \\ & = -6x + 2 \end{aligned}$$