

Simplify Expressions by Collecting Like Terms

Maths

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Simplify Expressions by Collecting Like Terms

1. State whether the following are like terms or not.

Give a reason for your answers.

a) $3y$ and $-5y$

e) $8ce$ and $4ec$

b) $5p$ and $8pk$

f) $9f$ and $\frac{2}{5}f$

c) x^2 and x^3

g) $5D$ and $2d$

d) $5(x + y)$ and $3(x + y)$

h) $0.7g^3$ and $3g^2$

2. Simplify the expressions by collecting like terms.

a) $6a + 9a$

b) $9b - 7b$

c) $-5c + 2c$

d) $2d^3 + 5d^3$

e) $0.5e + 3e - 0.7e$

f) $7f - 9f + 6f$



Simplify Expressions by Collecting Like Terms

3. Simplify the expressions by collecting like terms.

a) $8a + 3b + 2a + 4b$

b) $5c + 3d + d + 4c$

c) $9e + 5f + 6e - 3f - 2e$

d) $6.8g + 4.1h - 3.6g + 2h$

e) $9k^2 - 5k + 6k^2 + 9k + 5k^3$

f) $5m - 4n + 6mn + 3n$

g) $8p + 12 - 3p + 6$

h) $3.4r - 4.9s - 3.2s - 4.4r$

4. Explain the error in the questions below.

a) $p^3 + p^3 + p^3 \equiv p^9$

b) $5q + 7r - 2q + 5r \equiv 7q + 12r$

c) $5k^3 + 8k^3 - 5k^2 + 3k^3 \equiv 11k^3$

d) $7a - 5b - 4a + 4b \equiv 3a - 9b$

5. Simplify $\frac{3}{4}a + \frac{3}{5}b + \frac{3}{10}b - \frac{2}{3}a$



Answers



Simplify Expressions by Collecting Like Terms

1. State whether the following are like terms or not.

Give a reason for your answer.

a) $3y$ and $-5y$ - Yes

e) $8ce$ and $4ec$ - Yes

b) $5p$ and $8pk$ - No

f) $9f$ and $\frac{2}{5}f$ - Yes

c) x^2 and x^3 - No

g) $5D$ and $2d$ - No

d) $5(x+y)$ and $3(x+y)$

h) $0.7g^3$ and $3g^2$ - No

- Yes

2. Simplify the expressions by collecting like terms.

a) $6a + 9a \equiv 15a$

b) $9b - 7b \equiv 2b$

c) $-5c + 2c \equiv -3c$

d) $2d^3 + 5d^3 \equiv 7d^3$

e) $0.5e + 3e - 0.7e \equiv 2.8e$

f) $7f - 9f + 6f \equiv 4f$



Simplify Expressions by Collecting Like Terms

3. Simplify the expressions by collecting like terms.

a) $8a + 3b + 2a + 4b \equiv 10a + 7b$

b) $5c + 3d + d + 4c \equiv 9c + 4d$

c) $9e + 5f + 6e - 3f - 2e \equiv 13e + 2f$

d) $6.8g + 4.1h - 3.6g + 2h \equiv 3.2g + 6.1h$

e) $9k^2 - 5k + 6k^2 + 9k + 5k^3 \equiv 5k^3 + 15k^2 + 4k$

f) $5m - 4n + 6mn + 3n \equiv 5m - n + 6mn$

g) $8p + 12 - 3p + 6 \equiv 5p + 18$

h) $3.4r - 4.9s - 3.2s - 4.4r \equiv -r - 8.1s$

4. Explain the error in the questions.

a) $p^3 + p^3 + p^3 \equiv p^9$ Should be $3p^3$

b) $5q + 7r - 2q + 5r \equiv 7q + 12r$ $5q - 2q$, not add

c) $5k^3 + 8k^3 - 5k^2 + 3k^3 \equiv 11k^3$ The k^2 is a different term

d) $7a - 5b - 4a + 4b \equiv 3a - 9b$
 $-5b + 4b \equiv b$, not $-9b$

5. Simplify $\frac{3}{4}a + \frac{3}{5}b + \frac{3}{10}b - \frac{2}{3}a$

$\frac{1}{12}a + \frac{9}{10}b$

