Simplifying Expressions

LEVEL 1: The Basics

Q1: Simplify each of the following

a) $3x + 5x =$

b) $9b - b =$

c) $10c - 3c + 5c =$

d) $-8d + 2d =$

e) $-p - 4p =$

f) $12q - 5q + q =$

g) $2f + 3f - 4f =$

h) $2(x + 3) =$

i) $3(2a + 1) =$

j) $6(m + 2) =$

k) $-3(p - 1) =$

l) $\frac{1}{2}(4q + 6) =$

m) $0.5(2f - 8) =$

n) $4a + 6 - a =$
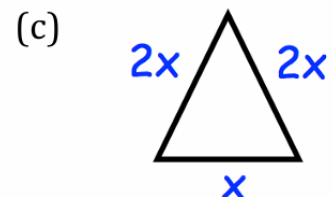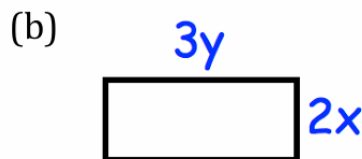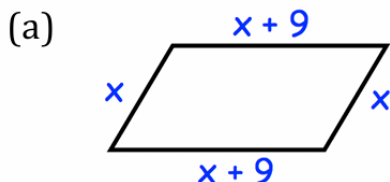
o) $10c - 3c + 5c - 1 =$

p) $-p - 4p - 2 =$

q) $12q - 5q + q + 3 =$

r) $\frac{6x-3}{3(2x-1)}$

Q2: Write down the perimeter of each shape below

(a)

(b)

(c)

Simplifying Expressions

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LEVEL 2: Dive Deeper

Q1: Simplify each of the following

- $5(2a - 3b + 4) =$

- $10pq - 3p + 5pq + 2p =$

- $10c + 2(3c - 5) - 4 =$

- $-4(m - 2n - 3) =$

- $-8x^2y + 2x^2y + 5xy^2 =$

- $-2(d + 4) + 7d - 1 =$

- $\frac{1}{3}(9p + 6q - 3) =$

- $-ab - 4ab + 7a =$

- $-p - 5(p - 2) + 8 =$

- $0.2(10c - 5d + 20) =$

- $12c^3 - 5c^2 + c^3 + 2c^2 =$

- $2(x + 3) + 3(x - 1) =$

- $6m + 2n - 3m + n =$

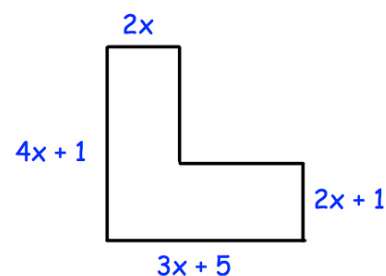- $6(m + n) - 2m + 3n =$

- $4(y - 2) - 2(y + 5) =$

Q2: A square has a side length of 3x. Find an expression for the perimeter of the square.

Q3: Find an expression for the perimeter of this shape

2x

4x + 1

2x + 1

3x + 5

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Simplifying Expressions

LEVEL 3: Mastering the Concept

Q1: Simplify each expression

❖ $-2(x^2 + 3x) + 4(x^2 - x) =$

❖ $5 - [2(b + 3) - (b - 1)] =$

❖ $3(2f + g) - 5(f - 2g) =$

❖ $\frac{1}{3}(6x + 9) - \frac{1}{4}(8x - 12) =$

❖ $6(2h - 3) - 2(h + 5) + 1 =$

❖ $0.25(8y - 4) + 0.5(6y + 2) =$

❖ $3[2(x + 1) - 4] + 5x =$

❖ $\frac{2}{5}(10a + 15) - \frac{1}{2}(4a - 6) =$

❖ $-2\{3y - [y + 4(y - 1)]\} =$

❖ $(x + 4)(x + 5) =$

❖ $4(a + 2[a - 3]) - 7a =$

❖ $\frac{18x^2y - 9xy^2}{3xy} =$

Simplifying Expressions

Extra worksheet:

1) Simplify: $6j \times 5k$

2) Simplify: $9x - 6y$

3) Simplify: $4(3 + x) - 12$

4) Simplify: $5(2x - 0.5y)$

5) $6x + 7y + x - 8y = 7x - y$

   Write down three other expressions that are equal to $7x - y$

6) Find the Error: Your friend tried to simplify the expression $4(2x - 3) - (x + 5)$ and got $8x - 17$. Your friend made a mistake. Find the mistake, explain what they did wrong, and provide the correct simplified expression.

7) A cheetah can run 103 feet per second. A zebra can run x feet per second.

   Write and simplify an expression that represents how many feet farther the cheetah can run in 10 seconds.