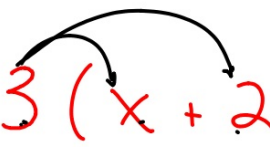


Basic Algebra 1.4

Use the distributive property to evaluate expressions

distributive property
term



$$3(x + 2) = x + 2 + x + 2 + x + 2$$
$$= 3x + 6$$

→ like terms

coefficient

equivalent expression

simplify (simplest form)


$$(3 \cdot x) + (3 \cdot 2)$$
$$3x + 6$$

$$2(x + 3)$$
$$2 \cdot x + 2 \cdot 3$$

Examples

Simplify each expression.

1 $3(x + 7) = 3x + 21$

algebra tiles

$$5(2n + 8) = 10n + 40$$

Your Turn

a. $6(a + b)$

$$9(1 + 3t) =$$

→ b. $(1 + 3t)9 = 9 + 27t$

Examples

Simplify each expression.

3 $4x + 9x$

4 $a + 7b + 3a - 2b$

Your Turn

c. $5st + 2st$

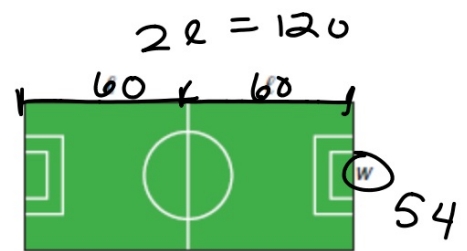
d. $6 + y + 3z + 4y$



Example
Sports Link

5

Write an equation representing the area A of a soccer field given its width w and length ℓ as shown in the diagram. Then simplify the expression and find the area if w is 54 yards and ℓ is 60 yards.



A game on a soccer field

$$\begin{aligned}\text{Area} &= \text{length} \cdot \text{width} \\ &= 120 \cdot 54 \\ &= 6480 \text{ yd}^2\end{aligned}$$

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45 47 49

Tues. Met 1.1-1.4