

Use directed number with algebra

1 Complete the sentences.

a) Seven add six is equal to six add _____

$$7 + 6 = 6 + \boxed{}$$

b) Five multiplied by nine is equal to nine multiplied by _____

$$5 \times 9 = 9 \times \boxed{}$$

c) Negative ten add six is equal to six add _____

$$-10 + 6 = 6 + \boxed{}$$

d) Eight subtract three is equal to eight add _____

$$8 - 3 = 8 + \boxed{}$$

e) Three multiplied by negative two is equal to negative three

multiplied by _____

$$3 \times -2 = -3 \times \boxed{}$$

f) Negative four multiplied by negative five is equal to four

multiplied by _____

$$-4 \times -5 = 4 \times \boxed{}$$

2 Tick the expressions that are not equivalent to $3f - 2g$

$$f + f + f - g - g$$

$$3f + -2g$$

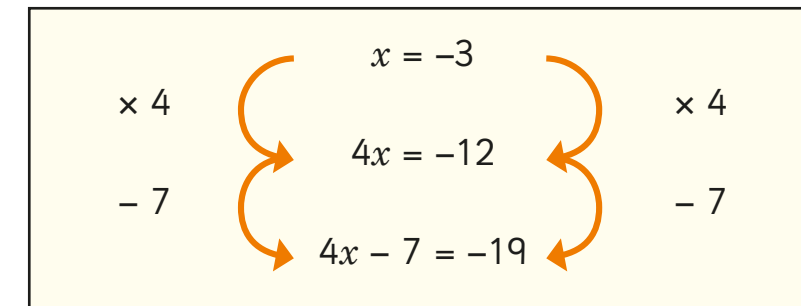
$$f + f + f - g + g$$

$$-2g + 3f$$

$$f + f + f - (g + g)$$

$$2g - 3f$$

3 Annie is finding the value of $4x - 7$ when $x = -3$
Here is Annie's method.



Use Annie's method to evaluate the expressions for the given values.

a) $3k + 4$ when $k = -2$

c) $-t + 11$ when $t = -2$

b) $10g - 5$ when $g = -4$

d) $f^2 - 12$ when $f = -3$

4 Is this statement sometimes true, always true or never true?
Explain your answer.

$y - x$ is less than y .

Discuss with a partner and share examples.

5 Solve the equations.

a) $-5x = 20$

$x =$

b) $6y = -15$

$y =$

c) $\frac{k}{7} = -3$

$k =$

d) $2a + 10 = 4$

$a =$

e) $h - 4 = -5$

$h =$

f) $-3x - 2 = -11$

$x =$

6 Ron is working out the value of $7 - 5x$ when $x = -8$
He has made a mistake with his substitution.

$$\begin{aligned} -5 \times -8 &= 40 \\ 40 - 7 &= 33 \end{aligned}$$

What mistake has Ron made?

7 Find the missing terms.

a) $6t - 3t \equiv \underline{\hspace{2cm}}$

d) $-6x + 2x \equiv \underline{\hspace{2cm}}$

b) $9k - 12k \equiv \underline{\hspace{2cm}}$

e) $10n + \underline{\hspace{2cm}} \equiv 2n$

c) $p - 8p + 2p \equiv \underline{\hspace{2cm}}$

f) $3k - \underline{\hspace{2cm}} \equiv 8k$

8 Simplify the expressions.

a) $4d + 3 + -d + 1 \equiv \underline{\hspace{2cm}}$

b) $-3t + h + 5 + 2t - 3 + 2h \equiv \underline{\hspace{2cm}}$

c) $2k - 3v + -3 + -2v + 1 - 2k + 3v \equiv \underline{\hspace{2cm}}$

9 Are the statements true or false? Tick your answers.

	True	False
When $x = -5$, $x^2 = -25$	☐	☐
When $y = -2$, $3y^2 = 36$	☐	☐

Discuss your answers with a partner.

