



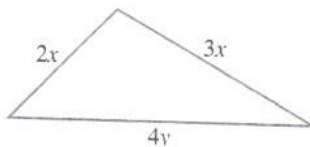
FURTHER PRACTICE

4. Simplify the following.
- $3n + 10 - 4n - 11$
 - $-6 + 3k - 4k + 7$
 - $2x - y + 3y - 5x$
 - $-4w - 2v + 9w + 2v$
 - $\frac{2}{3}p - \frac{1}{4}q + \frac{1}{6}p - \frac{1}{2}q$
 - $7t + 4av - \frac{5}{3}t + \frac{1}{2}av$
5. (a) Simplify the expression
 $-4 - 2x + 5 + x$.
- (b) Find the value of the expression when $x = 2$.
6. (a) Simplify the expression
 $7a - 2b + 5b - a - 3$.
- (b) Find the value of the expression when $a = -1$ and $b = 2$.
7. (a) Simplify the expression
 $\frac{3}{4}x - \frac{2}{5}ax - y + \frac{1}{3}ax - \frac{1}{8}x$.
- (b) Find the value of the expression when $a = 3$, $x = -2$ and $y = -6$.

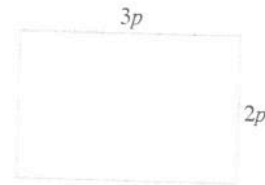


MATH WORK

8. The lengths of the sides of a triangle are $2x$ units, $4y$ units and $3x$ units. Express the perimeter of the triangle in terms of x and y .



9. A rectangle is $3p$ units long and $2p$ units wide.
- Express the perimeter of the rectangle in terms of p .
 - When $p = 12$, find the perimeter of the rectangle.



10. A woman works $2t$ hours each day from Monday to Friday. She works $(2t - y)$ hours on Saturdays. She does not work on Sundays.
- Express her total working hours in a week in terms of t and y .
 - How many hours does she work each week when $t = 4\frac{1}{2}$ and $y = 3$?
11. A man walks $(5d + 1)$ kilometers due east, then $\frac{3}{2}d$ kilometers due west and finally $(2d - \frac{1}{4})$ kilometers due east. How far east is he from the starting point?



BRAIN WORKS

- Write an algebraic expression that has three terms involving the variables p and q .
- Create an application problem whose answer can be simplified to $7x$.
- The total length of four roads is $(3x - 1)$ kilometers. Suggest a set of possible lengths of the four roads in kilometers.



BASIC PRACTICE

1. Simplify the following expressions.
- (a) $-(-2a + 7)$ (b) $-(4b - c - 5d)$
 (c) $-5 + (7k + 3)$ (d) $m - (8m - 9)$

2. Evaluate the following.

$$\begin{array}{r} \text{(a)} \quad 3a + 2 \\ + \quad 5a + 7 \\ \hline \end{array} \qquad \begin{array}{r} \text{(b)} \quad 2b + 3c \\ + \quad 4b - 2c \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad -4d - 7e \\ + \quad -6d + e \\ \hline \end{array} \qquad \begin{array}{r} \text{(d)} \quad 4f - 5 \\ - \quad 3f + 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \quad -7x + 6y \\ - \quad 2x - 3y \\ \hline \end{array} \qquad \begin{array}{r} \text{(f)} \quad 5t + 9z \\ - \quad -6t - 7z \\ \hline \end{array}$$

3. Simplify the following expressions.

- (a) $(2p + 3) + (p - 4)$
 (b) $(q + 2r) + (q - 2r)$
 (c) $(-4x - 5y) + (-2x + 7y)$
 (d) $(3t + 2u) - (t - 3u)$
 (e) $-1 - (6w - 1)$
 (f) $(-4n + 3s) - (4n + 8s)$



FURTHER PRACTICE

4. Simplify the following expressions.
- (a) $(2h - 3k + 6) + (8h - 5k - 2)$
 (b) $\left(-m - 8n + \frac{1}{2}\right) + \left(-7m + 6n + \frac{3}{2}\right)$
 (c) $(7x + 2y) + (4x - 6) - (-3 + 2y)$
5. Add $7x - 2y - 4z$ to $-2x + 3y - 5z$.
6. Find the sum of $5a - 3b$, $7b - 3c$ and $9c - a$.
7. Subtract $a - 4b - 3c$ from $a + 2b - 6c$.
8. Subtract $t - 3v$ from the sum of $7t - 2u - 3v$ and $3t + 5u - 8v$.



MATH WORK

9. There are three consecutive integers. If the smallest one is n , find the sum of the three integers.
10. The masses of 3 boxes of chocolates are $(3p + 4q + 2)$ grams, $(4p + 6q + 5)$ grams and $(p + 7q + 9)$ grams. Find their total mass.
11. The perimeter of a triangle is $(7x - 3y + 6)$ feet. The lengths of two sides of the triangle are $(2x + y - 1)$ feet and $(x - 2y + 10)$ feet.
- (a) Find the length of the third side in terms of x and y .
- (b) If $x = 5$ and $y = -1$, find the length of the third side.



BRAIN WORKS

12. The perimeter of a rectangle is $(6x + 5y)$ centimeters. Suggest two possible dimensions of the rectangle.

13.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Nine dates in a certain month are enclosed by a rectangle as shown above.

- (a) Explain a quick way to calculate the sum of the nine numbers.
- (b) Let n be the number at the top left hand corner of the rectangle. Express the sum of the nine numbers in terms of n .
- (c) Let m be the middle number in the rectangle. Express the sum of the nine numbers in terms of m .
- (d) Write down an equation relating m and n .
- (e) Describe some other interesting properties about the numbers within the rectangle.