

Name: _____

Date: _____

Chapter 6 Review

For each type of question, the achievement level is indicated. Showing work is an important strategy in communicating your knowledge and ideas so please be thorough.

Learning Goal 6.1

I can solve linear equations.

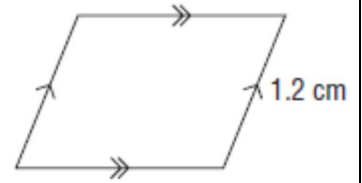
1. Solve the following equations. Show each step for full credit.

Developing			
a. $a + 4 = 9$	b. $b + 6 = -10$	c. $c + 3 = 1$	d. $d + 17 = 10$
e. $f - 17 = 10$	f. $g - 3 = 1$	g. $h - 6 = -10$	h. $j - 4 = 9$
i. $3k = 24$	j. $7m = -84$	k. $-6n = 72$	l. $-5p = -21$
m. $\frac{q}{3} = 2$	n. $\frac{-r}{4} = 3$	o. $\frac{s}{-2} = \frac{1}{6}$	p. $-\frac{t}{5} = 5$
q. $\frac{-u}{2} = -3$	r. $\frac{v}{-3} = -4$	s. $-\frac{w}{3} = -2$	t. $\frac{-x}{-6} = -1$
Proficient			
a. $3a + 2 = 8$	b. $\frac{b}{2} - 6 = 1$	c. $\frac{c}{8} + 5.5 = 2$	d. $10 = 3d - 12.5$
e. $-5f - 6 = 7$	f. $-0.5 = 8.1 - 2g$	g. $250 + 3.5h = 670$	h. $-22.5 = -2j - 30.5$
i. $\frac{k}{6} - 1.5 = -7$	j. $1.2 = \frac{2m}{3} + 5.1$	k. $\frac{n}{4} + \frac{7}{4} = \frac{5}{6}$	l. $\frac{5p}{16} - \frac{5}{4} = \frac{p}{4}$
m. $5(q - 7) = -15$	n. $2(r + 4) = 11$	o. $-3(s - 2.7) = 1$	p. $7.6 = -2(-3 - t)$
q. $8.4 = -6(u + 2.4)$	r. $2(-3v + 1.5) = 6$	s. $5(w - 7.2) = 14.5$	t. $-8 = 0.4(3.2 + x)$
u. $4y = 7 - 3y$	v. $-12z = 15 - 15z$	w. $-10.8 + 7a = 5a$	x. $6b - 11.34 = 4.2b$
y. $\frac{122}{c} = 3, c \neq 0$	z. $\frac{6}{d} = 2, d \neq 0$	aa. $-2 = \frac{6}{f}, f \neq 0$	bb. $\frac{6}{-g} = -2, g \neq 0$
Extending			
$4a + \frac{37}{5} = -17$	$8b - \frac{6}{7} = \frac{176}{7}$	$\frac{3}{4} - 5c = \frac{67}{6}$	$\frac{22}{8} + 10d = \frac{62}{5}$
$\frac{2f}{3} = \frac{4f}{5} + 7$	$\frac{5g}{2} = 11 + \frac{2x}{3}$	$12.9 + 2.3h = 4.5h + 19.5$	$-8j + 11 = -10 - 5.5j$
$5k + 7 = 2k + 1$	$\frac{6m + 2}{= 10} + 4m$	$-3n + 7 = 2n - 8$	$4p + 4 = -2p - 8$
$-4q - 3 = 3 - q$	$3r - 5 = 7 - 3r$	$2 - 3s = 2s + 7$	$13 - 3t = 4 - 2t$
$4(u + 5) = 5(u - 3)$	$3(4v + 5) = 2(-10 + 5v)$	$2.2(w - 5.3) = 0.2(-32.9 + w)$	
$\frac{7}{2}(x + 12) = \frac{5}{2}(20 + x)$	$\frac{1}{3}(5 - 3y) = \frac{5}{6}(y - 2)$	$\frac{3}{2}(1 + 3z) = \frac{2}{3}(2 - 3z)$	

Chapter 6 Review

Extending

2. A parallelogram has one shorter side of length 1.2 cm and perimeter 6.6cm. Write an equation that can be used to determine the length of the longer side and solve the equation to find the missing side.



3. An item increased in price by \$4.95. This is a 9% increase. What did the item cost before the price increase? Write an equation to represent the problem and solve.

4. A part-time sales clerk at a store is offered two methods of payment.

Plan A: \$1500 per month with a commission of 4% of his sales.

Plan B: \$1700 per month with a commission of 2% of his sales.

Let s represent the sales in dollars.

- Write an expression to represent the total earnings under Plan A.
- Write an expression to represent the total earnings under Plan B.
- Write an equation to determine the sales that result in the same total earnings from both plans and solve.

5. The price of gasoline increased by 6%. The new price is \$1.36/L. What was the price of gasoline before it increased?

6. Skylar is charged a fare of \$27.70 for a cab ride to their friend's house. The fare is calculated using a flat fee of \$2.50, plus \$1.20 per kilometre. What distance did Skylar travel?

7. Skateboards can be rented from two shops in a park.

Shop A charges \$15 plus \$3 per hour.

Shop B charges \$12 plus \$4 per hour.

Determine the time in hours for which the rental charges in both shops are equal.

DEVELOPING

c. $c + 3 = 1$

$-3 \quad -3$
 $c + 0 = -2$
 $c = -2$

j. $7m = -84$

$\frac{7m}{7} = \frac{-84}{7}$
 $m = -12$
 $m = -12$

t. $b \times \frac{+x}{+6} = -1 \times b$

$1x = -b$
 $x = -b$

PROFICIENT

b. $\frac{b}{2} - 6 = 1$

$+6 \quad +6$
 $2 \times \frac{b}{2} = 7 \times 2$
 $b = 14$

B
E
D
M
A
S

k. $12x \left(\frac{n}{4} + \frac{7}{4} = \frac{5}{6} \right)$

$4 \quad 8 \quad 12$
 $6 \quad 12$
 $3n + 21 = 10$
 $-21 \quad -21$
 $3n = -11$
 $\frac{3n}{3} = \frac{-11}{3}$
 $n = -\frac{11}{3}$

B
E
D
M
A
S

z. $d \times \frac{6}{d} = 2, d \neq 0$

$\frac{6}{2} = \frac{2d}{2}$
 $3 = d$
 $d = 3$

$$12x \left(\frac{3}{4} - 5c = \frac{67}{6} \right) \quad \begin{matrix} 4 & 8 & 12 \\ 6 & 12 & \end{matrix}$$

$$\begin{array}{r} +9 \\ -9 \end{array} - 60c = 134$$

$$\begin{array}{r} -60c \\ -60 \end{array} = \frac{125}{-60}$$

$$C = -\frac{125 \div 5}{60 \div 5}$$

$$C = -\frac{25}{12}$$

B
E
D
M
A
S

EXTENDING

$$6x \left(\frac{5g}{2} = 11 + \frac{2g}{3} \right) \quad \begin{matrix} 2 & 4 & 6 \\ 3 & 6 & \end{matrix}$$

$$\begin{array}{r} 15g \\ -4g \end{array} = \begin{array}{r} 66 \\ -4g \end{array} + \frac{4g}{-4g}$$

$$\frac{11g}{11} = \frac{66}{11}$$

$$g = 6$$

$$13 - 3t = 4 - 2t \quad \begin{matrix} +3t & +3t \end{matrix}$$

$$\begin{array}{r} 13 \\ -4 \end{array} = \begin{array}{r} +4 \\ -4 \end{array} + t$$

$$9 = t$$

$$t = 9$$

$$6x \left(\frac{1}{3}(5-3y) = \frac{5}{6}(y-2) \right) \quad \begin{matrix} 3 & 6 \end{matrix}$$

$$2(5-3y) = 5(y-2)$$

$$\begin{array}{r} 10 \\ -6y \end{array} = \begin{array}{r} +5y \\ -5y \end{array} - 10$$

$$\begin{array}{r} +10 \\ -10 \end{array} - 11y = -10$$

$$\begin{array}{r} -11y \\ -11 \end{array} = \frac{-20}{-11}$$

$$y = \frac{20}{11}$$

7. Skateboards can be rented from two shops in a park.

Shop A charges \$15 plus \$3 per hour.

Shop B charges \$12 plus \$4 per hour.

$h = \#$ of hrs. of rental

Determine the time in hours for which the rental charges in both shops are equal.

$$\text{Shop A} \quad \begin{array}{r} 15 + 3h \\ -3h \end{array} = \begin{array}{r} 12 + 4h \\ -3h \end{array} \quad \text{Shop B}$$

$$\begin{array}{r} 15 \\ -12 \end{array} = \begin{array}{r} +12 \\ -12 \end{array} + h$$

$$3 = h$$

$$h = 3$$

In 3 hours, you will be charged the same amount by both rental shops.