Module 2 Review

EXERCISES

Write an expression for each situation. *(Lesson 2.1)*

1. The original price of an item plus a sales tax of 8.5%

$x + 0.085x = 1.085x$

2. The total cost of 6 pens and 3 folders. A folder costs $1.15 more than a pen.

$6p + 3(p + 1.15) = 9p + 3.45$

3. The sum of Andre and Brandon's scores on a math quiz is 180. Andre's score is 2 times as much as 30 less than Brandon's score. Find each student's quiz score. *(Lesson 2.2)*

$2(x - 30) + x = 180$; Andre 100; Brandon 80

4. The formula for finding the area of a trapezoid is $A = \frac{1}{2}(b_1 + b_2)h$ where A represents the area of the trapezoid, b_1 and b_2 are bases, and h represents the height. Solve the formula for h. *(Lesson 2.3)*

$h = \frac{2A}{b_1 + b_2}$

5. Solve $7(3 - x) \leq 5x - 15$ for x. *(Lesson 2.4)*

$x \geq 3$

Write an expression in simplest form for each verbal description. *(Lesson 2.1)* • Extra Practice

1. The sum of the cost of dinner d and a $12 tip divided equally between 3 people

$(d + 12) \div 3 = \frac{1}{3}d + 4$

2. The total pay for 12 hours of work at a base rate of p per hour plus a temporary raise of $2.50 per hour

$12(p + 2.5) = 12p + 30$

3. Given $x < y$, compare the following expressions and determine which is greater: $2x - y$; $2y - x$. Explain your answer. *(Lesson 2.1)*

$2y - x$; Since $y > x$, $2y > 2x$ and $-y < -x$ (or $-x > -y$). Adding these: $2y - x > 2x - y$

4. The formula $y - y_1 = m(x - x_1)$ is the point-slope form of the equation of a line where m is the slope of the line and (x, y) and (x_1, y_1) are points of the line. Solve the equation for m, and find the slope of a line that includes the points $(4, -2)$ and $(5, 0)$. *(Lesson 2.3)*

$m = \frac{y - y_1}{x - x_1}$; 2

Solve. *(Lessons 2.2, 2.4, 2.5)*

5. $-17 - 5(x + 3) = 3x$

$x = -4$

6. $100x - 200 > 50x - 75$

$x > 2.5$

7. $12 < 2x + 2 \leq 22$

$5 < x \leq 10$

8. $-13 < -x + 5 < 8$

$-3 < x < 18$

1. Consider the new expression that is obtained by simplifying $8(x - 1) + 15$. Select True or False for each statement.

   A. The new expression has 3 terms. ○ True ● False

   B. The coefficient of x in the new expression is 8. ● True ○ False

   C. The constant in the new expression is 14. ○ True ● False

2. Look at each equation and possible solution. Is the solution correct? Select Yes or No for each equation.

   A. $3 - m = -2(m + 6); m = -15$ ● Yes ○ No

   B. $5(p + 3) = -35; p = -4$ ○ Yes ● No

   C. $8q = 3(10 + q); q = 6$ ● Yes ○ No

3. The formula for finding the volume of a triangular prism $V = \frac{1}{2}(bh)\ell$ where b represents the base length, h represents the base height, and ℓ represents the length of the prism. Select True or False for each statement.

   A. The formula solved for h is $h = \frac{2V\ell}{b}$. ○ True ● False

   B. The formula solved for ℓ is $\ell = \frac{2V}{bh}$. ● True ○ False

   C. The formula solved for b is $b = \frac{2V}{bh}$. ○ True ● False

4. Sherman hopes to get at least a 90 average on his science tests. He has one more test before the end of the school year. His past test scores are 79, 94, 91, and 92. Write and solve an inequality that represents this situation. What is the lowest score Sherman can get on his final test and reach his goal? Show your work.

$$\frac{79 + 94 + 91 + 92 + x}{5} \geq 90$$

$$356 + x \geq 450$$

$$x \geq 94$$

The lowest score he can get is 94.