A Message from the Authors:

Thank you for downloading our free product! These problem pages with their corresponding solutions will provide you with a sample of the Algebra products available for digital download on Teachers Pay Teachers (4 Algebra sets plus Algebra Essentials and a Bundle). This free sample includes a No Calculator page, 2 Multiple Choice problem pages, a Choose All That Apply page, and Constructed Response questions with detailed solutions for every exercise!

Our math warm-ups were designed to be used on a daily basis to review and reinforce fundamental math skills AND prepare students for standardized tests. The detailed easy-to-understand solutions can be used to revise or completely reteach essential skills. This sample and these problem sets are ideal for Algebra 1 teachers as daily math warm-ups (bell ringers, bell work, etc.) and can be used to assess foundational skills for students in Algebra 2 or any algebra-based course. Expose those problem areas and fill in the gaps!

Key features of each problem set include:

- Exercises are based on the design and format of numerous standardized tests, specifically:
  - **36 Multiple choice questions per set (3 problems per page)**
  - **3 "No calculator" problems per set**
  - **2 "Choose all that apply" exercises per set**
  - **1 Constructed response question involving 4 interconnected parts**
- Developed by two certified high school math teachers based on their students' needs
- **Detailed step-by-step solutions** for every question (written specifically for students to develop or reinforce their understanding of basic mathematical and algebraic processes and to expose and correct students' errors)
- Concepts increase in difficulty across each set
- Common Core State Standards for Mathematics listed for each problem (excluding constructed response questions)
- Most appropriate Mathematical Practice from the Common Core Standards noted for each problem, although more than one practice often applies (excluding constructed response questions)

We hope that you find our products beneficial! We encourage you to use these math warm-ups to engage your students at the bell, revisit critical math skills and teach test-taking strategies in the first 5 minutes of class! We feel that continual daily review of these concepts during the school year will allow students to build confidence and competence in their understanding of mathematics and algebra, gaining the momentum necessary to succeed in your math classroom! Enrich your curriculum with this supplement!

We would love to have your feedback on this product so that we may better serve you! Follow us on TPT and on Facebook or visit our website: mathmomentum.com!!

Rachel Gelderman & Susan West

NO CALCULATOR

Recommendation: Students should not use a calculator to solve the problems on this page.

Common Core Standard: 6.EE.2.c
Mathematical Practice: *Attend to precision.*

1. Simplify: $6 - (4 + 5 \bullet 2) \div (2 - 3)^3$

   A −8

   B 8

   C 12

   D 20

Common Core Standard: 4.OA.3, 7.RP.2.c
Mathematical Practice: *Model with mathematics.*

2. A chef is preparing food for a group of 21 people. He uses a recipe that calls for 4 tomatoes to serve six people. Since the number of tomatoes is directly proportional to the number of people being served, how many tomatoes would he need to serve this group?

   A 4

   B 5

   C 12

   D 14

Common Core Standard: 6.RP.3.c, 7.SP.5, 7.SP.7.a
Mathematical Practice: *Reason abstractly and quantitatively.*

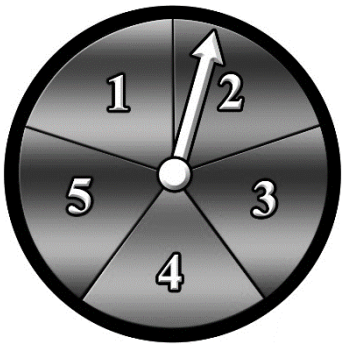
3. What is the probability that Austin will spin a number less than 3?

   A 40%

   B 45%

   C 60%

   D 2



1. **(D)** To simplify the expression $6 - (4 + 5 \bullet 2) \div (2 - 3)^3$, consider the order of operations. The acronym "PEMDAS" is often used to help students remember the order of operations. The appropriate order for simplifying an expression, represented by the acronym, is as follows:

   P: Stands for parentheses, but also includes brackets and other grouping symbols
   E: Stands for exponents
   M/D: Stand for multiplication and division, which must be completed as they appear in order from left to right
   A/S: Stand for addition and subtraction, which must also be completed as they appear in order from left to right

   To begin simplifying, look for parentheses or other grouping symbols. Simplify the expression using the order of operations as follows:

   $6 - (4 + 5 \bullet 2) \div (2 - 3)^3 =$
   Parentheses (Multiply before adding): $6 - (4 + 10) \div (-1)^3 =$ $\left[(-1)^3 = (-1)(-1)(-1) = -1\right]$
   Complete Parentheses: $6 - 14 \div (-1)^3 =$
   Exponents: $6 - 14 \div -1 =$
   Divide ($-14 \div -1$): $6 + 14 =$
   Add: 20

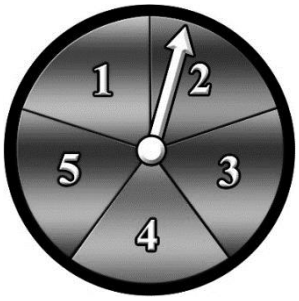
2. **(D)** Since the number of tomatoes are directly proportional to the number of people, set up the following direct proportion where x is the number of tomatoes needed:

$$\frac{4 \text{ tomatoes}}{6 \text{ people}} = \frac{x \text{ tomatoes}}{21 \text{ people}}$$

   Multiply both sides by 21: $\frac{84}{6} = x$

   Simplify: $14 = x$

3. **(A)** Since the sections of the spinner are evenly spaced, the arrow is equally likely to stop on any one of the five sections. There are two numbers on the spinner that are less than 3 (1 or 2).



   Probability is the:

$$\frac{\text{number of favorable outcomes}}{\text{total number of possible outcomes}} = \frac{\text{outcomes 1 or 2}}{5 \text{ possible outcomes}} = \frac{2}{5}$$

   Convert $\frac{2}{5}$ to a decimal and then to a percent. To change a fraction to a decimal, divide the numerator by the denominator: $\frac{2}{5} = 2 \div 5 = 0.4$. The division is shown to the right.

$$\begin{array}{r} 0.4 \\ 5\overline{)\,2.0} \\ \underline{-2\,0} \\ 0 \end{array}$$

   To convert this decimal to a percent, multiply by 100:

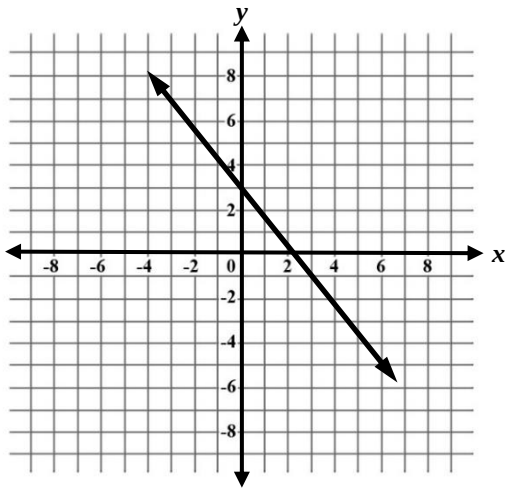
$$(0.4)(100) = 40\%$$

   [Multiplying by 100 moves the decimal point two place values to the right.]

Solutions to Page 1

Common Core Standard: 5.G.1, 8.F.4, F-IF.7.a, F-IF.9
Mathematical Practice: *Look for and make use of structure.*

1. Which table of values represents the given line?



A

x	−6	−2	0	2	6
y	10	6	3	0	−5

B

x	−6	−3	0	3	6
y	11	7	3	−1	−5

C

x	11	7	3	−1	−5
y	−6	−3	0	3	6

D

x	9	6	3	0	−3
y	−4	−2	0	2	4

Common Core Standard: A-REI.3
Mathematical Practice: *Reason abstractly and quantitatively.*

2. Solve for x: $4|2x-6|-9<15$

   A $x < 6$

   B $0 < x < 6$

   C $x < 0$ and $x > -6$

   D $x > 0$ or $x < 6$

Common Core Standard: 8.EE.7.b, 8.F.4, F-IF.4, F-LE.5
Mathematical Practice: *Model with mathematics.*

3. The 2006 profit margin for Larry's Light Bulbs is given by the regression equation $p = -0.02b + 2366$, where p is the profit in dollars and b is the number of bulbs sold. Approximately how many bulbs will he have to sell to make a profit of $3000?

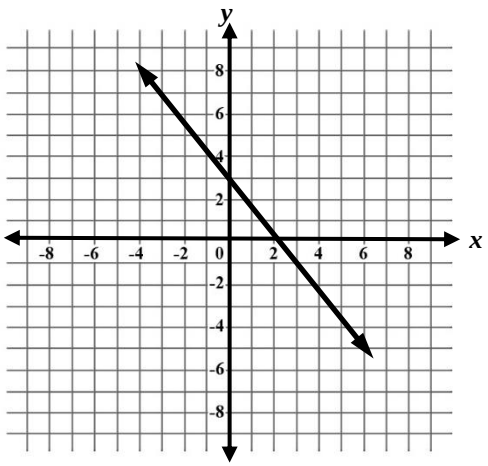
   A 32,000

   B 120,000

   C 270,000

   D Larry cannot make a profit.

1. **(B)** To determine which table represents the graph of this line, identify coordinates (x, y) on the line. Note that the y-intercept $(0, 3)$ is shown on tables in choices A and B.



Choice A

x	-6	-2	0	2	6
y	10	6	3	0	-5

Choice B

x	-6	-3	0	3	6
y	11	7	3	-1	-5

Although the line passes close to points $(-2, 6)$ and $(2, 0)$, these points are not on the line. A second point at the intersection of two grid lines that is on this line is $(3, -1)$. The correct choice is B.

2. **(B)** To solve the inequality, initially isolate the expression within the absolute value bars.

$$4|2x-6|-9<15$$

Add 9 to both sides: $4|2x-6|<24$

Divide both sides by 4: $|2x-6|<6$

Recall, for example, $|5|$ and $|-5|$ are both 5. Therefore the expression inside the absolute value bars $(2x - 6)$ could be either positive or negative. So eliminate the absolute value bars by setting up two inequalities, one positive and one negative: $2x - 6 < 6$ and $-(2x - 6) < 6$. Solve both inequalities.

$$2x-6<6$$

Add 6 to both sides: $2x<12$

Divide both sides by 2: $x<6$

$$-(2x-6)<6$$

Divide both sides by -1: $2x-6>-6$ (reverse the inequality sign)

Add 6 to both sides: $2x>0$

Divide both sides by 2: $x>0$

Because x is both greater than 0 **and** less than 6, the solution can be written as $0 < x < 6$.

3. **(D)** To determine the number of light bulbs Larry must sell to make a profit of \$3000, let $p = 3000$ in the given equation and solve for b, the number of light bulbs.

$$p=-0.02b+2366$$

Substitute 3000 for p: $3000=-0.02b+2366$

Subtract 2366 from both sides: $634=-0.02b$

Divide both sides by -0.02: $-31{,}700=b$

Since it is not possible to sell a negative number of light bulbs, there is no way that Larry can make a profit. Larry should close his business as he is losing money with every light bulb sold! The correct answer is choice D.

Solutions to Page 27

CHOOSE ALL THAT APPLY

Common Core Standard: 6.EE.5, 8.EE.7, A-REI.1, A-REI.3
Mathematical Practice: *Reason abstractly and quantitatively.*

1. The ordered pair $(-2, 1)$ is a solution to which of the following? Choose **all** that apply.

A $y - x = -1$

B $2x + 3y = -1$

C $y = 6x - 11$

D $|2x + 5| = -1$

E $-3|4x + 1| \leq y - 2$

F $f(x) = -3x - 5$

G $3(x + y) - 2(1 - y) = 2(x - 1) + 5y + x$

Common Core Standard: A-CED.4, A-REI.3
Mathematical Practice: *Reason abstractly and quantitatively.*

2. Which of the following are equivalent to $ax + by = c$. Choose **all** that apply.

A $ax - c = by$

B $x = \frac{by - c}{a}$

C $y = \frac{c - ax}{b}$

D $b = \frac{ax - c}{y}$

E $a = \frac{-(by - c)}{x}$

F $b(a - y) + c = a(x + b)$

CHOOSE ALL THAT APPLY

1. **(B, E, F, G)**
To determine whether an ordered pair is a solution to an equation/inequality, substitute the *x*- and *y*-coordinates into the equation or inequality. If the resulting equation/inequality is a true statement after it has been simplified, the ordered pair satisfies the equation/inequality and is therefore a solution. Test the ordered pair (–2, 1) individually in each answer choice, substituting –2 for *x* and 1 for *y*:

	Choice A:	Choice B:	Choice C:
	$y - x = -1$	$2x + 3y = -1$	$y = 6x - 11$
Substitute:	$1 - (-2) \stackrel{?}{=} -1$	$2(-2) + 3(1) \stackrel{?}{=} -1$	$1 \stackrel{?}{=} 6(-2) - 11$
Simplify:	$3 \neq -1$	$-4 + 3 \stackrel{?}{=} -1$	$1 \stackrel{?}{=} -12 - 11$
		$-1 = -1$ ✓	$1 \neq -1$

	Choice D:	Choice E:	Choice F: (Recall that $f(x)$ is another name for y.)
	$\lvert 2x + 5 \rvert = -1$	$-3\lvert 4x + 1 \rvert \leq y - 2$	$f(x) = -3x - 5$
Substitute:	$\lvert 2(-2) + 5 \rvert \stackrel{?}{=} -1$	$-3\lvert 4(-2) + 1 \rvert \stackrel{?}{\leq} 1 - 2$	$1 \stackrel{?}{=} -3(-2) - 5$
Simplify:	$\lvert -4 + 5 \rvert \stackrel{?}{=} -1$	$-3\lvert -8 + 1 \rvert \stackrel{?}{\leq} -1$	$1 \stackrel{?}{=} 6 - 5$
	$\lvert 1 \rvert \stackrel{?}{=} -1$	$-3\lvert -7 \rvert \stackrel{?}{\leq} -1$	$1 \stackrel{?}{=} 1$ ✓
	$1 \neq -1$	$-3\lvert 7 \rvert \stackrel{?}{\leq} -1$	
		$-3(7) \stackrel{?}{\leq} -1$	
		$-21 \leq -1$ ✓	

	Choice G:
	$3(x + y) - 2(1 - y) = 2(x - 1) + 5y + x$
Substitute:	$3(-2 + 1) - 2(1 - 1) = 2(-2 - 1) + 5(1) + (-2)$
Simplify:	$3(-1) - 2(0) = 2(-3) + 5 + (-2)$
	$-3 - 0 = -6 + 5 + (-2)$
	$-3 = -1 + (-2)$
	$-3 = -3$ ✓

The ordered pair (–2, 1) is only a solution to choices B, E, F and G.

2. **(C, E, F)**
To determine whether each answer choice is equivalent to the given equation, try to rewrite each of the answer choices so that it looks like the original equation $ax + by = c$. Since the variable *c* is alone in the original equation, solve each of the answer choices for *c* and look for the rewritten answer to match the $ax + by = c$:

	Choice A:
	$ax - c = by$
Subtract *ax* from both sides:	$-c = by + ax$
Divide both sides by –1:	$c = -by - ax$

Clearly this equation is not equivalent to the original as the "*ax*" and "*by*" terms are negative in the answer choice but not in the original given equation. Therefore, choice A is not equivalent to the original equation $ax + by = c$.

Solutions to Page 28

CHOOSE ALL THAT APPLY

Choice B: $x = \frac{by - c}{a}$

Multiply both sides by a: $ax = by - c$
Subtract *by* to both sides: $ax - by = -c$
Divide both sides by –1: $-ax + by = c$

Clearly this equation is not equivalent to the original as the "*ax*" and "*by*" terms are again negative in the answer choice but not in the original given equation. Therefore, choice B is not equivalent to the original equation $ax + by = c$.

Choice C: $y = \frac{c - ax}{b}$

Multiply both sides by *b*: $by = c - ax$
Add *ax* to both sides: $by + ax = c$

By the Commutative Property, this answer choice is the same as the original equation. Therefore, choice C is equivalent to the original equation $ax + by = c$.

Choice D: $b = \frac{ax - c}{y}$

Multiply both sides by *y*: $by = ax - c$
Subtract *ax* from both sides: $by - ax = -c$
Divide both sides by –1: $-by + ax = c$

Clearly this equation is not the same as the original since the "*by*" term is negative in the answer choice but not in the original given equation. Therefore, choice B is not equivalent to the original equation $ax + by = c$.

Choice E: $a = \frac{-(by - c)}{x}$

Multiply both sides by *x*: $ax = -(by - c)$
Distribute: $ax = -by + c$
Add *by* to both sides: $ax + by = c$

This is the same equation as the original. Therefore, choice E is equivalent to the original equation $ax + by = c$.

Choice F: $b(a - y) + c = a(x + b)$
Distribute: $ab - by + c = ax + ab$
Subtract *ab* from both sides: $-by + c = ax$
Add *by* to both sides: $c = ax + by$

Since $c = ax + by$ is the same as the original equation $ax + by = c$, choice F is equivalent to the original equation.

Solutions to Page 28

Common Core Standard: 8.F.4, F-IF.6
Mathematical Practice: *Reason abstractly and quantitatively.*

1. The table below lists the populations and the average daily water usages for four different towns. This relationship represents a linear function. Find the slope of the function.

A $-0.01\overline{3}$

B $0.01\overline{3}$

C -75

D 75

Population	Daily water usage (gal.)
3000	225,000
5500	412,500
8250	618,750
11,050	828,750

Common Core Standard: 8.F.4, F-IF.6, S-ID.7
Mathematical Practice: *Model with mathematics.*

2. What does the slope of the function in problem #1 represent?

A the number of people per gallon of water

B the number of gallons of water per person

C the number of gallons of water per town

D the number of towns per gallon of water

Common Core Standard: 8.F.4, F-IF.7
Mathematical Practice: *Look for and make use of structure.*

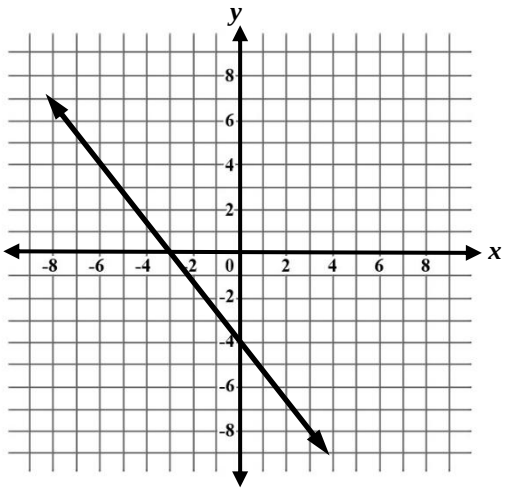
3. Identify the equation of the line shown on the graph.

A $4x + 3y = -12$

B $3x - 4y = 12$

C $y - 4 = \frac{-4}{3}(x - 3)$

D $y = \frac{-4}{3}x - 3$



1. **(D)** The values in the table can be considered ordered pairs, where the first column represents the *x*-coordinates and the second column represents the *y*-coordinates. To find the slope of a line, two points (or ordered pairs) are needed. Choose any two, since the slope remains the same between any two points on the line. The first two ordered pairs from the table will be used. Let (3000, 225,000) = (x_1, y_1) and (5500, 412,500) = (x_2, y_2). Use the slope formula and substitute the appropriate values:

Population	Daily water usage (gal.)
3000	225,000
5500	412,500
8250	618,750
11,050	828,750

Slope Formula: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

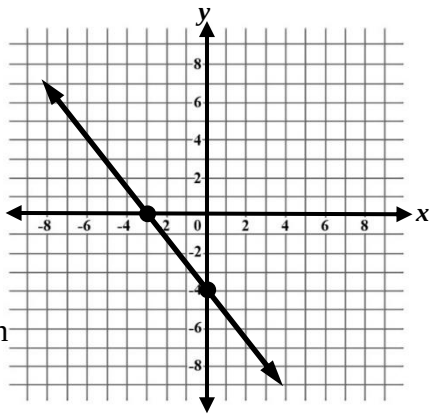
Substitute: $m = \dfrac{412{,}500 - 225{,}000}{5500 - 3000}$

Simplify: $m = \dfrac{187{,}500}{2500} = 75$

So the slope of the function is 75.

2. **(B)** Slope represents a rate of change between two variables. Examine the slope formula. Note that the numerator is a change in the *y*-values. In this situation, the *y*-values represent gallons of water. The denominator is a change in *x*-values, which represents the number of people. Looking at the labels when calculating slope, notice that daily water usage (in gallons) is divided by population. This produces a numerical expression involving the following labels: gallons of water divided by number of people. These labels can be rewritten as gallons of water per person. Therefore the slope represents the number of gallons of water per person.

3. **(A)** The slope-intercept form of the equation of a line is $y = mx + b$ where m is the slope of the line, b is the *y*-intercept and (x, y) is a point on the line. The graph shows that the *y*-intercept (point at which the line crosses the *y*-axis) is -4. To find the slope, identify two points on the line and count the "rise" (vertical change) and "run" (horizontal change). Slope is the ratio of the "rise" to the "run." For example, counting between points $(-3, 0)$ and $(0, -4)$, the vertical change is -4 (down 4 units) and the horizontal change is $+3$ (3 units to the right). The slope is $\frac{-4}{3}$.



Complete the equation by substituting the values for slope (m) and the *y*-intercept (b):

$$y = \frac{-4}{3}x + (-4) \text{ or } y = \frac{-4}{3}x - 4$$

This equation does not match Choice D, the only equation in slope-intercept form. Both Choices A and B are lines in standard form ($Ax + By = C$). To identify the correct equation of this line, convert to standard form as follows:

$$y = \frac{-4}{3}x - 4$$

Add $\frac{4}{3}x$ to both sides: $\frac{4}{3}x + y = -4$ (In standard form, x and y are on the same side of the equation.)

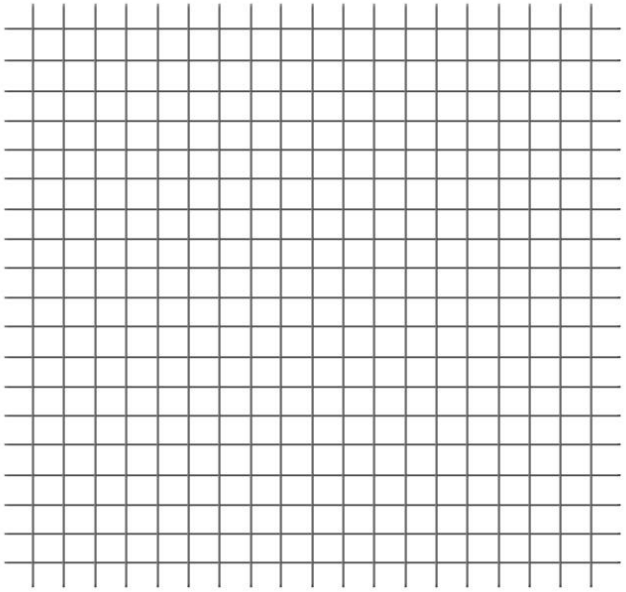
Multiply both sides by 3 to eliminate the denominator: $4x + 3y = -12$ (In standard form, A, B and C are usually integers with A positive.)

Solutions to Page 37

CONSTRUCTED RESPONSE

The new school store opened this year with students from the local chapter of Future Entrepreneurs of America serving in every area of responsibility. The management team will staff the store with students who will be paid through a work-study program. Money earned by students will be placed on their student ID cards as funds that can be used in the school store, in the lunch program, or for after-school activities such as dances or special events. All students will receive a minimum credit of $7.25 per hour for working in the school store. Management will be paid on a salary basis which is a set amount regardless of the number of hours worked.

1. Tim, the new manager of the store, will earn a credit of $50 each week for his service. If h represents the number of hours worked each week by students (excluding Tim) and w represents the total weekly wages for all school store employees, write an equation to model this situation. Show this relationship on the graph below, labeling your axes and including an appropriate scale.



2. If the salary budget for the school store is $200 per week, how many hours are available to staff the store? [Use your equation from Part 1 and show all work.]

Continued on next page

CONSTRUCTED RESPONSE

3. Tim plans to work during lunch each day which is 36 minutes. He also intends to spend an hour every day after school, including Friday, in the store supervising students. If he works the number of hours that he plans, how will his rate of pay compare with that of other store employees? [Show all work and explain your answer.]

4. If Tim prefers to earn at least the same hourly wage as his employees, how many hours, at most, should Tim spend managing the store? Explain.

CONSTRUCTED RESPONSE

1. To write an equation to model the total weekly wages for all school store employees, begin by expressing the situation in words:

Manager's salary	+	store employees' salaries		= total weekly wages
\$50	+	\$7.25 per hour × number of hours worked		= total weekly wages
\$50	+	\$7.25 ×	h	= w

(Recall that h represents the number of hours worked each week by students (excluding Tim) and w represents the total weekly wages for all school store employees.)

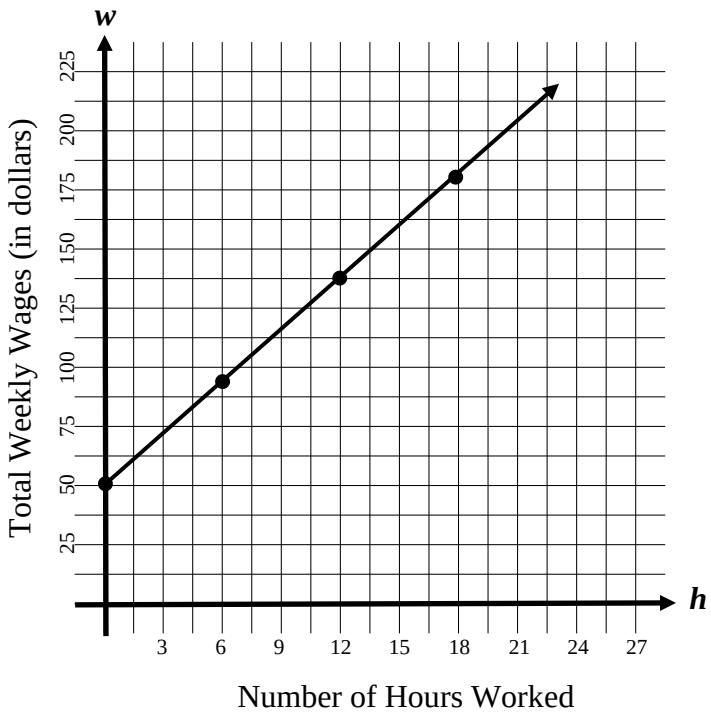
Therefore, the equation is \$50 + \$7.25*h* = *w* or *w* = \$7.25*h* + \$50.

Graph this relationship by recognizing the independent variable is the number of hours worked (h) and the dependent variable is the total weekly wages (w). Total wages depend on number of hours worked. Because it is not possible to work a negative number of hours or receive a negative salary, only the first quadrant will be needed. Label both axes and select an appropriate scale. The scale shown below is not the only appropriate scale. Any scale which uses the complete graph to visually display the relationship between two variables would be acceptable.

Note that the y-intercept is 50. In other words, when $h = 0$, $w = 50$. Complete a table of values or graph using the slope of 7.25 for each hour worked.

Equation: $w = 7.25h + 50$

h	*w*
0	50.
6	93.5
12	137
18	180.5



2. To determine how many hours are available to staff the store, substitute \$200 for w (the salary budget for the school store) and solve for h as follows:

Equation from Part 1:	$w = 7.25h + 50$
Substitute 200 for w:	$200 = 7.25h + 50$
Subtract 50 from both sides:	$150 = 7.25h$
Divide both sides by 7.25:	$\frac{150}{7.25} = h \approx 20.69 \text{ hours}$

Tim has no more than 20.69 hours to staff the school store.

Solutions to Page 44

CONSTRUCTED RESPONSE

3. If Tim works 36 minutes each day during lunch and an hour every day after school, including Friday, calculate the number of hours worked each week as follows:

$$36 \text{ minutes} \times 5 \text{ days} + 1 \text{ hour} \times 5 \text{ days} =$$
$$36 \text{ minutes} \times 5 \text{ days} + 60 \text{ minutes} \times 5 \text{ days} =$$
$$180 \text{ minutes} \quad + \quad 300 \text{ minutes} =$$
$$480 \text{ minutes (or 8 hours)}$$

Because Tim earns a salary of \$50 per week and plans to work 8 hours, determine his rate of pay (dollars per hour) as follows:

$$\frac{\$50}{8 \text{ hours}} = \$6.25 \text{ per hour}$$

Tim earns \$6.25 per hour, but his employees earn \$7.25 per hour. Tim earns \$1.00 less per hour than his employees!

4. In order to earn at least the same hourly wage as his employees, write an inequality to find the maximum number of hours that Tim should work each week in the store as shown below:

$$\frac{\$50}{x \text{ hours}} \geq \$7.25 \text{ per hour}$$

Multiply both sides by x: $\$50 \geq \$7.25x$

Divide both sides by 7.25 $\frac{\$50}{\$7.25} \geq x$

$$6.897 \text{ hours} \geq x$$
$$\text{or} \quad x \leq 6.897 \text{ hours}$$

Tim should work at most 6.897 hours each week to earn the same wage as his employees.

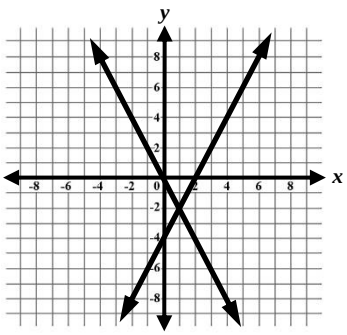
Solutions to Page 45

Common Core Standard: 8.EE.8.a, 8.EE.8.b, A-REI.6
Mathematical Practice: *Look for and make use of structure.*

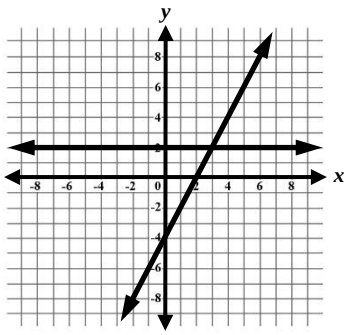
1. Which of the following graphs represents the system to the right?

$$\begin{cases} y = 2x - 4 \\ x = 2 \end{cases}$$

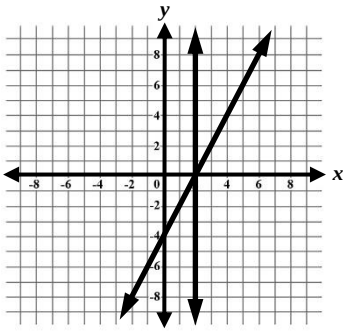
A



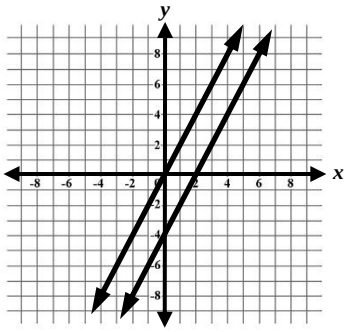
B



C



D



Common Core Standard: 8.EE.8.a, 8.EE.8.c, A-REI.6
Mathematical Practice: *Model with mathematics.*

2. Internet service provided by Connect Company costs $26 per month. The same service provided by Links R Us costs $15 per month for the first year and then $32 per month thereafter. At what point will the companies' costs be the same?

   A At 22 months

   B At 24 months

   C At 30 months

   D At 34 months

Common Core Standard: 8.EE.8.a, 8.EE.8.c, A-REI.6
Mathematical Practice: *Model with mathematics.*

3. Martin has $300 to spend on internet service. Which company should he use to get the longest service possible?

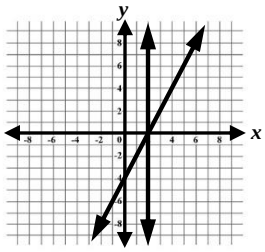
   A Connect Company

   B Links R Us

   C Either company – both provide the same length of service for $300

   D He should abandon internet service, save his money and go to the library.

1. **(C)** Each graph shows the line $y = 2x - 4$, a line with a slope of 2 and y-intercept of -4. The line $x = 2$ is a vertical line (no matter what the value of y, x always equals 2) with an x-intercept of 2.



   Choice C is therefore the correct graph of this system.

2. **(D)** Define variables as follows: Let x = total number of months of internet service
   $x - 12$ = number of months after the first year of service
   C = costs for Connect Company
   L = costs for Links R Us

   Since Connect Company charges the same cost each month, the total cost can be found by multiplying the monthly cost by the number of months: $C = 26x$. For the first year of service, Links R Us charges \$15 per month. To compute the cost for this first year, multiply 12 months by \$15. The months after this first year are given by the expression $x - 12$. So after the first year monthly costs are found by multiplying $(x - 12)$ by \$32 per month. Hence, $L = (12)(15) + 32(x - 12)$.

   Both companies' costs are the same when $L = C$. So solve the following:

	$26x = (12)(15) + 32(x - 12)$
Distribute and simplify:	$26x = 180 + 32x - 384$
Combine like terms:	$26x = 32x - 204$
Subtract $32x$ from both sides:	$-6x = -204$
Divide both sides by -6:	$x = 34$

   The companies' costs will be the same at 34 months.

3. **(B)** Although the obvious answer is that Martin should abandon internet service altogether and visit the public library, he won't. So to find the best deal, compute the number of months of service. Substitute \$300 for L and C in the cost equations and solve for the number of months:

	$C = 26x$
Substitute:	$300 = 26x$
Divide both sides by 26:	$11.\overline{538461} = x$

   So Martin could use Connect Company for 11 months.

	$L = (12)(15) + 32(x - 12)$
Substitute:	$300 = (12)(15) + 32(x - 12)$
Distribute and simplify:	$300 = 180 + 32x - 384$
Combine like terms:	$300 = 32x - 204$
Add 204 to both sides:	$504 = 32x$
Divide both sides by 32:	$15.75 = x$

   So Martin could use Links R Us for 15 months. Therefore Martin should choose Links R Us.

Solutions to Page 51