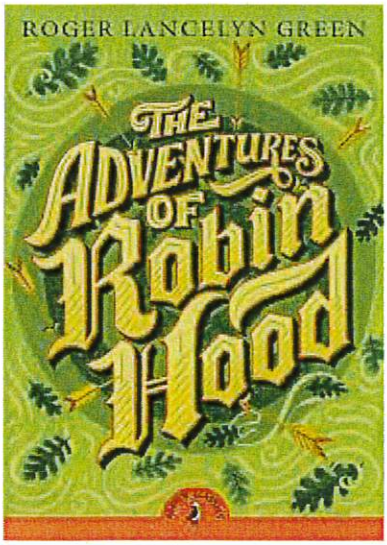
Summer Reading 2025 for the Fourth Form

The Plan: Read, Read, Read!

Read a total of 1200 pages.



ALL of us will read *The Adventures of Robin Hood* by Roger Lancelyn Green and be ready to discuss the book on the second day of class in the fall.

This book is readily available at most libraries and can also be found on audiobooks.

Along with *Robin Hood* (which is 320 pages), your reading page count must total 1200 pages.

You may use audible books to fulfill your summer reading assignment since this method invites the entire family to "read" together while traveling, etc. When school begins in September, we will explore the archetypal concept of the "hero's journey" as it applies to the characters we read. So... as you read, be on the look-out for what makes the characters in your stories heroic, what challenges they face that shape them, and how they emerge at the end. We will follow and explore these hero's journey patterns throughout the year.

ADDITIONAL TITLES TO CONSIDER:

Adam of the Road by Elizabeth Gray Vining	**(Middle Ages)**
The Trumpeter of Krakow by Eric Kelly	**(Medieval Europe)**
The Shakespeare Stealer by Gary Blackwood	**(Shakespearean England)**
The Red-Headed Princess by Ann Rinaldi	**(Elizabethan England)**
The Second Mrs. Giaconda by E.L. Koningsburg	**(Renaissance)**

"Reading is a basic tool in the living of a good life."
Mortimer Adler

Fill out the form below.

Note: A parental signature is required on this form.

This form will be collected on the first day of school.

--Summer Reading Pledge and Report: 1200 Pages Total--

I have read the following books this summer:

	Title	Author	Number of Pages
1.			
2.			
3.			
4.			
5.			
6.			
7.			

Total number of pages read: _____

Student's Signature: _____

Parent's Signature: _____

Summer Math Packet

Unit: Knowledge of Algebra, Patterns, and Functions
Objective: Write expressions and equations.

Review: Word Chart

Addition	Subtraction	Multiplication	Division
more than	less than	times	quotient
increased by	decreased by	multiplied by	divided by
sum of	fewer than	twice	divided into
added to	change	product	separate into equ a parts

Examples:

1) Two times a number $2x$
2) Three less than a number is equal to 7. $x - 3 = 7$
3) The sum of a number and 1 is 5. $x + 1 = 5$
4) Cody has \$50 to spend. How many shirts can he buy at \$16.50 each? Write an equation to solve. $16.50x = 50$

Write an expression or equation for each of the following:

1.) Five times a number is 25.	2.) The sum of a number and 6 is 15.
3.) 24 divided by some number is 7.	4.) Five dollars less than two times Chris' pay is \$124.
5.) Write a word phrase that can be represented by $x - 11$.	6.) Suppose a DVD costs \$19 and a CD costs \$14. Write an equation to find how many CDs you can buy along with one DVD if you have \$65 to spend.

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Algebra, Patterns, and Functions

Objective: Determine the unknown in a linear equation with 1 or 2 operations

> Remember, equations must always remain balanced.
> - If you add or subtract the same number from each side of an equation, the two sides remain equal.
> - If you multiply or divide the same number from each side of an equation, the two sides remain equal.

Example 1: Solve $x + 5 = 11$

$x + 5 = 11$	Write the equation
$-5 \quad = -5$	Subtract 5 from both sides
$x = 6$	Simplify

⇨ Check

$x + 5 = 11$	Write the equation
$6 + 5 = 11$	Replace x with 6
$11 = 11$✓	The sentence is true

Example 2: Solve $-21 = -3y$

$-21 = -3y$	Write the equation
$-3 \quad = -3$	Divide each side by – 3
$7 = y$	Simplify

⇨ Check

$-21 = -3y$	Write the equation
$-21 = -3(7)$	Replace the y with 7
$-21 = -21$?	Multiply – Is the sentence true?

Example 3: Solve $3x + 2 = 23$

$3x + 2 = 23$	Write the equation
$-2 \quad = -2$	Subtract 2 from or add -2 to each side
$3x \quad = 21$	Simplify
$\frac{3x}{3} \quad = \frac{21}{3}$	Divide each side by 3
$x = 7$	Simplify

⇨ Check

$3x + 2 = 23$	Write the equation
$3(7) + 2 = 23$?	Replace x with 7
$21 + 2 = 23$?	Multiply
$23 = 23$?	Add – Is the sentence true?

1.) Solve $p + 7 = 15$

2.) Solve $j - 5 = -8$

3.) Solve $12d = -72$

4.) Solve $\frac{n}{11} = 7$

5.) Solve $5x - 5 = 5$

6.) Solve $4t + 3.5 = 12.5$

7.) Solve $\frac{x}{2} - 9 = -2$	8.) Solve $\frac{d}{3} + 10 = 7$
9.) Solve $-9p - 17 = 10$	10.) Solve $\frac{w}{4} - 4 = 3$
11.) Write an equation to represent the following scenario: You withdrew \$100 from the ATM machine. The new balance is \$372. What was the original balance b of your account?	12.) Write an equation to represent the following scenario: Alexa scored 87 on her history test. The test had a multiple-choice section and a short-answer section. Alexa earned 74 points on the multiple-choice section. How many points p did she earn on the short-answer section?
13.) Write an equation to represent the following scenario: Mark wants to buy a skateboard that costs \$55. He plans to save \$5 per week. How many weeks w will it take him to save \$55?	14.) Write an equation to represent the following scenario: This year, 14,265 people applied to a particular college. The number of applicants increased by 868 from last year. How many people p applied last year?
15.) Write an equation to represent the following scenario: It costs \$12 to attend a golf clinic with a local pro. Buckets of balls for practice during the clinic cost \$3 each. How many buckets b can you buy at the clinic if you have \$30 to spend?	16.) Write an equation to represent the following scenario: An online retailer charges \$6.99 plus \$0.55 per pound to ship electronics purchases. How many pounds p is a DVD player for which the shipping charge is \$11.94?
On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5	

Unit: Knowledge of Algebra, Patterns, and Functions
Objective: Graph ordered pairs in a coordinate plane.

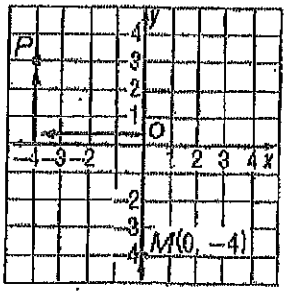
The **coordinate plane** is used to locate points. The horizontal number line is the ***x*-axis**. The vertical number line is the ***y*-axis**. Their intersection is the **origin**.
Points are located using **ordered pairs**. The first number in an ordered pair is the ***x*-coordinate**; the second number is the ***y*-coordinate**.
The coordinate plane is separated into four sections called **quadrants**.

Example 1: Name the ordered pair for point P. Then identify the quadrant in which P lies.

- Start at the origin.
- Move 4 units left along the *x*-axis.
- Move 3 units up on the *y*-axis.

The ordered pair for point P is (- 4, 3).
P is in the upper left quadrant or quadrant II.

Quadrant 2 Quadrant 1



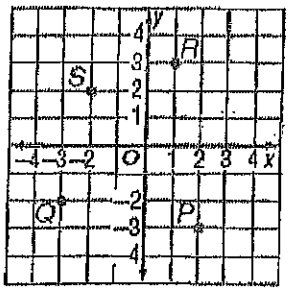
Quadrant 3 Quadrant 4

Example 2: Graph and label the point M (0, - 4).

- Start at the origin.
- Move 0 units along the x-axis.
- Move 4 units down on the y-axis.
- Draw a dot and label it M(0, - 4).

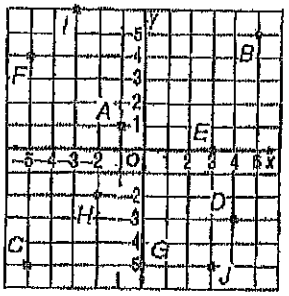
1.) Name the ordered pair for each point graphed at the right. Then identify the quadrant in which each point lies.

	Coordinates	Quadrant
P	(___, ___)	____
Q	(___, ___)	____
R	(___, ___)	____
S	(___, ___)	____



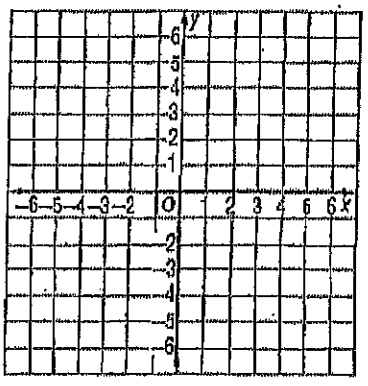
2.) Find each of the points below on the coordinate plane. Then identify the quadrant in which each point lies.

	Coordinates	Quadrant
A	(___, ___)	____
J	(___, ___)	____
B	(___, ___)	____
H	(___, ___)	____



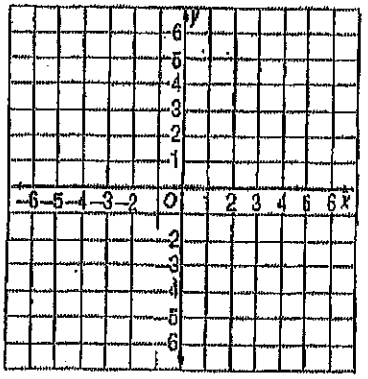
3.) Graph and label each point on the coordinate plane.

N (3, -1)
P (-2, 4)
Q (-3, -4)
R (0, 0)
S (-5, 0)



4.) Graph and label each point on the coordinate plane.

D (0, 4)
E (5, 5)
G (-3, 0)
H (-6, -2)
J (0, -2)

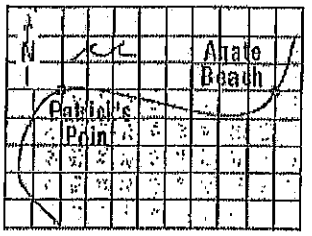


On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Measurement
Objective: Determine the distance between 2 points using a drawing and a scale.

A scale drawing represents something that is too large or too small to be drawn at actual size. Similarly, a scale model can be used to represent something that is too large or too small for an actual-size model. The scale gives the relationship between the drawing/model measure and the actual measure.

Example: On this map, each grid unit represents 50 yards. Find the distance from Patrick's Point to Agate Beach.



	Scale		Patrick's Point to Agate Beach	
map →	1 unit	=	8 units	← map
actual →	50 yards		x yards	← actual

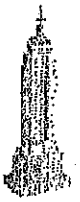
$1 \cdot x = 50 \cdot 8$ cross multiply

$x = 400$ simplify

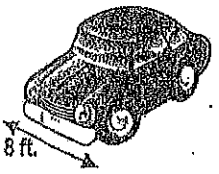
It is 400 yards from Patrick's Point to Agate Beach.

1.) On a map, the distance from Los Angeles to San Diego is 6.35 cm. The scale is 1 cm = 20 miles. What is the actual distance?

2.) Lexie is making a model of the Empire State Building. The scale of the model is 1 inch = 9 feet. The needle at the top is 31.5 feet tall. How big should the needle be on the model?

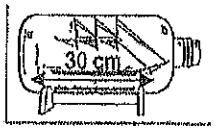


3.) A scale drawing of an automobile has a scale of 1 inch = ½ foot. The actual width of the car is 8 feet. What is the width on the scale drawing?

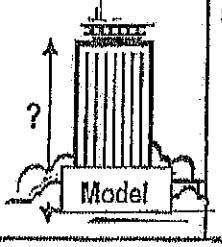


Actual car

4.) A model ship is built to a scale of 1 cm : 5 meters. The length of the model is 30 centimeters. What is the length of the actual ship?



5.) Jose wants to build a model of a 180-meter tall building. He will be using a scale of 1.5 centimeters = 3.5 meters. How tall will the model be? Round your answer to the nearest tenth.



6.) A pond is being dug according to plans that have a scale of 1 inch = 6.5 feet. The maximum distance across the pond is 9.75 inches on the plans. What will be the actual maximum distance across the pond?

Plans

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Number Relationships & Computation

Objective: Determine equivalent forms of rational numbers expressed as fractions, decimals, percents, and ratios. B

Examples:

A RATIO is a comparison of two numbers by division. When a ratio compares a number to 100, it can be written as a PERCENT. To write a ratio or fraction as a percent, find an equivalent fraction with a denominator of 100. You can also use the meaning of percent to change percents to fractions.

Write $\frac{19}{20}$ as a percent.

$$\frac{19}{20}\ \frac{\cdot 5}{\cdot 5} = \frac{95}{100} = 95\%$$ Since 100 ÷ 20 = 5, multiply the numerator and denominator by 5.

Write 92% as a fraction in simplest form.

$$\frac{92}{100} = \frac{\div 4}{\div 4} = \frac{23}{25}$$

Write 92% as a decimal. Move decimal two places to the left. Add zeros if needed. 92.0% = 0.92

Write 0.4 as a percent. Move decimal two places to the right. Add zeros if needed. 0.4 = 40%

1.) Write $\frac{7}{25}$ as a percent and decimal.

2.) Write 19% as a decimal and fraction in simplest form.

3.) Write $\frac{9}{50}$ as a percent and decimal.

4.) Write 75% as a decimal and fraction in simplest form.

5.) Ms. Crest surveyed her class and found that 15 out of 30 students brushed their teeth more than twice a day. Write this ratio as a fraction in simplest form, then write it as a % and a decimal.

6.) A local retail store was having a sale and offered all their merchandise as a 25% discount. Write this percent as a fraction in simplest form, then write it as a decimal.

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Knowledge of Number Relationships & Computation
Objective: Add, subtract, multiply and divide integers. - B
Examples:

MULTIPLYING & DIVIDING INTEGER RULES:

- Two integers with DIFFERENT signs the answer is NEGATIVE.
- Two integers with SAME signs the answer is POSITIVE.

Examples:

5 (- 2) = 5 times – 2, the signs are different so the answer will be negative = - 10

(- 6) • (- 9) = the signs are the same so the answer will be positive = 54

30 ÷ (- 5) = the signs are different so the answer will be negative = - 6

- 100 ÷ (- 5) = the signs are the same so the answer will be positive = 20

1.) Multiply: - 14 (- 7)

2.) Divide: 350 ÷ (- 25)

3.) Evaluate if a = - 3 and c = 5

$-3ac$

4.) Evaluate if d = - 24, e = - 4, and f = 8

$$\frac{de}{f}$$

5.) A computer stock decreased 2 points each hour for 6 hours. Determine the total change in the stock value over the 6 hours.

6.) A submarine descends at a rate of 60 feet each minute. How long will it take it to descend to a depth of 660 feet below the surface?

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4

Unit: Order of Operations and Evaluating Expressions
Objective: Use the order of operations to simplify a numerical expression.

Order of Operations:
P – Perform operations inside the (Parentheses)
E – Evaluate any Exponents
M/D – Multiplication/ Division (whichever comes first in the expression, moving left to right)
A/S – Addition/ Subtraction (whichever comes first in the expression, moving left to right)

1.) Simplify: $7 - 10 \cdot 5$

2.) Simplify: $17 - 100 / 10 \cdot 5 + 14$

3.) Simplify: $9 \cdot (5 + 5) + 3$

4.) Simplify: $16 + 4^3 \cdot 2 / 16$

5.) Evaluate $11p - 6$ for $p = 5$

6.) Evaluate $3x^2 - 4$ when $x = -4$

7.) Evaluate $62 + 3a$ for $a = 12$

8.) Evaluate $-4y^2 - 8y + 1$ when $y = -3$

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 – 4 5

Unit: Knowledge of Number Relationships & Computation

Objective: Add, subtract, and multiply positive fractions and mixed numbers. - A

Examples:

- To add unlike fractions (fractions with different denominators), rename the fractions so there is a common denominator.

Add: $\frac{1}{6}+\frac{2}{5}=$ $\frac{1}{6}=\frac{1\cdot5}{6\cdot5}=\frac{5}{30}$ $\frac{2}{5}=\frac{2\cdot6}{5\cdot6}=\frac{12}{30}$ $\frac{5}{30}+\frac{12}{30}=\frac{17}{30}$

Add: $12\frac{1}{2}+8\frac{2}{3}=$ $12\frac{1}{2}=12\frac{1\cdot3}{2\cdot3}=12\frac{3}{6}$ $8\frac{2}{3}=8\frac{2\cdot2}{3\cdot2}=8\frac{4}{6}$

$12\frac{3}{6}+8\frac{4}{6}=20\frac{7}{6}$ $\frac{7}{6}$ is improper so we must change it to proper. 7 divided by 6 = $1\frac{1}{6}$

$20+1\frac{1}{6}=21\frac{1}{6}$

1.) Add: $\frac{1}{3}+\frac{1}{9}$

2.) Add: $7\frac{4}{9}+10\frac{2}{9}$

3.) Add: $1\frac{5}{9}+4\frac{1}{6}$

4.) Add: $2\frac{1}{2}+2\frac{2}{3}$

5.) A quiche recipe calls for $2\frac{3}{4}$ cups of grated cheese. A recipe for quesadillas requires $1\frac{1}{3}$ cups of grated cheese. What is the total amount of grated cheese needed for both recipes?

6.) You want to make a scarf and matching hat. The pattern calls for $1\frac{7}{8}$ yards of fabric for the scarf and $2\frac{1}{2}$ yards of fabric for the hat. How much fabric do you need in all?

On a scale of 1 – 5 (1: Weak, 5: Strong) rate yourself on this section of math: 1 2 3 4 5

Unit: Simplifying Expressions

Objective: Simplify variable expressions by combining like terms and using the Distributive Propety.

Examples:

- **To combine – add terms that have the same exact variable part.**
- **To distribute – multiply the number outside the parentheses to all terms inside the parentheses.**
- **REMEMBER! Keep track of the sign of the number as you regroup**

Example: Simplify the expression.

a) $4x-3+1-2x$
$4x-2x-3+1$
$2x-2$

b) $14y+2-10y+13$
$14y-10y+2+13$
$4y+15$

c) $a+2b-5b-6a$
$1a-6a+2b-5b$
$-5a-3b$

Example: Simplify the expression first using the Distributive Property.

a) $2(m+6)$
$2\cdot m+2\cdot 6$
$2m+12$

b) $-3(g-7)$
$-3\cdot g--3\cdot 7$
$-3g+21$

c) $4(2k-1)-3k$
$4\cdot 2k-4\cdot 1-3k$
$8k-4-3k$
$5k-4$

1.) $7d-8+4d+4$

2.) $2v-5+5v$

3.) $4(b+1)$

4.) $-2(2q-1)$

5.) $5(x+10)+x$

6.) $-6-7(c+10)$

Answer Key

Check your answers after completing each section. Indicate whichever statement best applies to you.

Page 2

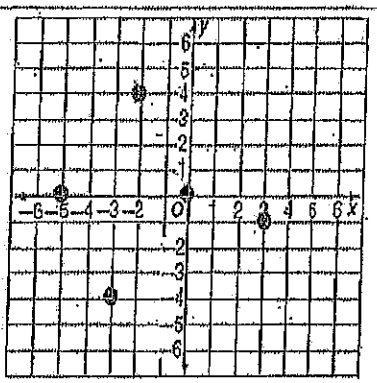
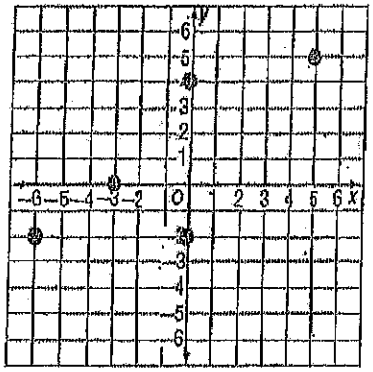
Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $5x = 25$			
2. $x + 6 = 15$			
3. $\frac{24}{x} = 7$			
4. $2x - 5 = 7$			
5. Answers will vary.			
6. $19 + 14x = 65$			

Pages 3 to 4

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $p = 8$			
2. $j = -3$			
3. $d = -6$			
4. $n = 77$			
5. $x = 2$			
6. $t = 2.25$			
7. $x = 14$			
8. $d = -9$			
9. $p = -3$			
10. $w = 28$			
11. $b - 100 = 372$			
12. $74 + p = 87$			
13. $5w = 55$			

14. $p + 868 = 14{,}265$			
15. $12 + 3b = 30$			
16. $6.99 + 0.55p = 11.94$			

Page 5

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. P (2,-3) IV; Q (-3, -2) III; R (1, 3) I; S (-2, 2) II			
2. 2. A (-1, 1) II; J (3, -5) IV; B (5, 5) I; H (2, -2) III			
3. 			
4. 			

Page 6

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. 127 mi			
2. 3.5 in			
3. 16 in			
4. 150 cm			

5. $77\frac{1}{2}$ cm			
6. 63.375 ft			

Page 7

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. 0.28, 28%			
2. 0.19, $\frac{19}{100}$			
3. 0.18, 18%			
4. 0.75, $\frac{3}{4}$			
5. $\frac{1}{2}$, 0.5, 50%			
6. $\frac{1}{4}$, 0.25			

Page 8

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. -5			
2. -21			
3. 5			
4. -4			
5. 85°			
6. 8 ft			

Page 9

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. 98			
2. -14			
3. 45			
4. 12			
5. -12			
6. 11 min.			

Page 10

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. -43			
2. -19			
3. 93			
4. 24			
5. 49			

6. 44			
7. 98			
8. -11			

Page 11

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $\frac{4}{9}$			
2. $17\frac{2}{3}$			
3. $5\frac{13}{18}$			
4. $5\frac{1}{6}$			
5. $4\frac{1}{12}$ *cups*			
6. $4\frac{3}{8}$ *yds*			

Page 12

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $\frac{4}{5}$			
2. $\frac{1}{2}$			
3. $5\frac{1}{10}$			
4. $\frac{11}{24}$			
5. $2\frac{5}{12}$ *lbs*			
6. $2\frac{7}{12}$ *lbs*			

Page 13

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $\frac{8}{15}$			
2. $10\frac{1}{2}$			
3. $5\frac{5}{6}$			
4. $15\frac{2}{3}$			
5. $20\frac{1}{2}$ *yds*			
6. $\frac{5}{12}$			

Page 14

Answer	I got it on the 1st try!	I got it with corrections.	I have no idea.
1. $11d-4$			
2. $7v-5$			
3. $4b+4$			

4. $-4q + 2$			
5. $6x + 50$			
6. $-7c - 76$			

EE
SKILL 20

Name _____ Date _____

Factor Algebraic Expressions

Example 1

Factor the expression.

$6p + 15$

STEP 1 Determine the greatest common factor (GCF) of the terms.

The GCF of $6p$ and 15 is 3.

STEP 1 Use the GCF to factor each term.

$6p + 15 = 3(2p) + 3(5)$

STEP 1 Rewrite the expression as a product.

$3(2p) + 3(5) = 3(2p + 5)$

The factored form of $6p + 15$ is $3(2p + 5)$.

Example 2

Factor the expression. If the expression cannot be factored, explain why not.

$13 - 5n$

STEP 1 Determine the greatest common factor (GCF) of the terms.

The only common factor of 13 and $5n$ is 1.

STEP 1 Because 1 is the only common factor of 13 and $5n$, you cannot factor the expression $13 - 5n$.

Quick Check

Factor the expression. If the expression cannot be factored, explain why not.

1. $4y + 12$ _____
2. $9 + 5b$ _____
3. $16t - 2$ _____

Practice on Your Own

Factor the expression. If the expression cannot be factored, explain why not.

4. $8j + 18$ _____
5. $12s - 28$ _____
6. $30 + 7h$ _____
7. $3 - 15g$ _____
8. $3 + 14v$ _____
9. $10c + 25$ _____
10. $21x - 14$ _____
11. $10r + 15$ _____
12. $17 + 4f$ _____

EE

Skill 2

Name _____ Date _____

Recognize Equivalent Expressions

Example 1 **Through Expanding**

Determine whether the algebraic expressions below are equivalent.

$3(2g - 4)$ and $6g - 12$

STEP 1 Use the distributive property to expand the first expression.

$3(2g - 4) = 3(2g) - 3(4)$

$= 6g - 12$

STEP 2 Compare the expanded expression to the second expression. They are the same, so they are equivalent.

So, you can write $3(2g - 4) = 6g - 12$.

Example 2 **Through Factoring**

Determine whether the algebraic expressions below are equivalent.

$25 + 20t$ and $5(6 + 4t)$

STEP 1 Factor the first expression. The GCF of 25 and 20 is 5.

$25 + 20t = 5(5) + 5(4t)$

$= 5(5 + 4t)$

STEP 2 Compare the factored expression to the second expression. They are not the same, so they are not equivalent.

So, you can write $25 + 20t \neq 5(6 + 4t)$.

Quick Check

Choose an equivalent expression.

1. $8a - 4$ is equivalent to _____.

   a) $4(2a - 1)$ b) $2(8a - 4)$ c) $3(5a - 1)$ d) $4(2a + 1)$

2. $12 + 3y$ is equivalent to _____.

   a) $6(2 + 3y)$ b) $12(1 + y)$ c) $3(4 + y)$ d) $4(3 + 2y)$

Practice on Your Own

Choose an equivalent expression.

3. $4n - 10$ is equivalent to _____.

   a) $4(n - 5)$ b) $5(2n - 2)$ c) $2(n - 5)$ d) $2(2n - 5)$

4. $11(3d - 6)$ is equivalent to _____.

   a) $33d - 6$ b) $33d - 66$ c) $3d - 66$ d) $11d - 66$

5. $30 + 18p$ is equivalent to _____.

   a) $6(5 + 3p)$ b) $2(15 + 3p)$ c) $3(5p + 6)$ d) $3(10 + 3p)$

6. $8(7r + 2)$ is equivalent to _____.

   a) $56r + 16$ b) $15r + 10$ c) $56r + 2$ d) $7r + 16$

EE

Skill 23

Name _____ Date _____

Solve Algebraic Equations by Balancing

You can use inverse operations to solve an equation. This is also called *balancing an equation*.

STEP 1 Get the variable alone on one side of the equation. To do that, you add, subtract, multiply, or divide both sides of the equation by the same nonzero number.

STEP 1 Simplify the equation.

Example 1 Addition or subtraction

Solve the equation.

$x - 4 = 7$

$x - 4 = 7$

$x - 4 + 4 = 7 + 4$ Add 4 to both sides.

$x = 11$ Simplify the equation.

Example 2 Multiplication or division

Solve the equation.

$\frac{1}{4}x = 12$

$\frac{1}{4}x = 12$

$\frac{1}{4}x \div \frac{1}{4} = 12 \div \frac{1}{4}$ Divide both sides by $\frac{1}{4}$.

$\frac{1}{4}x \cdot \frac{4}{1} = 12 \cdot \frac{4}{1}$ Multiply both sides by the reciprocal of $\frac{1}{4}$.

$x = 48$ Simplify the equation.

Quick Check

Solve each equation.

1. $x + 3 = 12$ _____
2. $x - 7 = 1$ _____
3. $5x = 75$ _____

Practice on Your Own

Solve each equation.

4. $\frac{2}{5}x = 20$ _____
5. $x + \frac{1}{4} = 1$ _____
6. $x + 7.5 = 12$ _____
7. $x - \frac{3}{4} = 4$ _____
8. $x - 13 = 21$ _____
9. $1.1x = 3.3$ _____

RP

Name _____ Date _____

Skill 29 Find Rates and Unit Rates

Example 1 Finding Unit Rates

Nia drove 225 miles in 5 hours. Find her average speed in miles per hour.

STEP 1 Write the rate. Label the terms.

$\frac{225}{5}$ ← miles
5 ← hours

STEP 2 Use the unitary method to find the unit rate, the average number of miles Nia drove in 1 hour.

5 hours ← 225 miles

1 hour ← $\frac{225}{5}$ = 45 miles per hour

Nia drove at an average speed of 45 mi/h.

Example 2 Comparing Unit Rates

The price of cereal at two stores is shown. At which store is the cereal less expensive?

Store A: \$3.29 for a 12-oz box
Store B: \$5.00 for an 18-oz box

STEP 1 Find the unit price at each store.

Store A: $\frac{\$5.00}{12} \approx \$0.27$ per oz

Store B: $\frac{\$5.00}{18} \approx \$0.28$ per oz

STEP 2 Compare the unit prices.

\$0.27 < \$0.28

The cereal is less expensive at Store A.

Quick Check

Solve.

1. A cyclist rode 36 miles in 4 hours. What was her average speed in miles per hour?

_____

2. Mr. Leonard paid \$35.75 for 10 gallons of gas. At another gas station, Ms. Lu paid \$36.90 for 11 gallons. Who got the better deal?

_____

Practice on Your Own

Solve.

3. A 5-pound bag of white onions costs \$4.25. A 5-pound bag of red onions costs \$4.45. Find the unit prices for each.

_____

4. The Write-On Company sells packs of 3 pens for \$1.50. The Ink Company sells packs of 7 pens for \$3.50. Find the unit price for each.

_____

5. Jenna drove 298 miles in 5 hours. Barry drove 238 miles in 4 hours. Who was driving at a greater average speed?

_____

6. Julieta bought $\frac{1}{4}$ lb of bologna for \$1.50, 1 lb of ham for \$7.00, and $\frac{1}{2}$ lb of salami for \$3.99. Which deli meat cost the most per pound?

_____

Skill 16

Quick Check

1. m 2. 5 3. 7
4. 2 5. +

Practice on Your Own

6. z 7. 6 8. 8
9. – 10. $6z$ 11. 8
12. 2

Skill 17

Quick Check

1. 9 2. 17 3. 5
4. 5 5. 2 6. 6

Practice on Your Own

y	$y - 4$	$5y$	$3y + 2$
3	$3 - 4 = -1$	15	11
0	-4	0	2
-2	-6	-10	-4
5	1	25	17
-4	-8	-20	-10

Skill 18

Quick Check

1. No; the x and y terms cannot be combined.
2. Yes; the b terms can be combined.

Practice on Your Own

5. $12x$ 6. $11m + 16$
7. $-8d + 8$, or $8 - 8d$ 8. $15j + 8$
9. $-5y - 8$ 10. $7x + 4$

Skill 19

Quick Check

1. $9y - 6$ 2. $7 + 48a$ 3. $16e + 20$

Practice on Your Own

4. $42s + 18$ 5. $16 - 8r$ 6. $24 + 12m$
7. $5b - 40$ 8. $45d + 63$ 9. $40s - 8$
10. $49 + 49g$ 11. $20k - 90$ 12. $36v - 24$
13. $72 + 36w$ 14. $48n - 64$ 15. $121p + 55$

Skill 20

Quick Check

1. $4(y + 3)$
2. only common factor is 1
3. $2(8t - 1)$

Practice on Your Own

4. $2(4j + 9)$
5. $4(3s - 7)$
6. only common factor is 1
7. $3(1 - 5g)$
8. only common factor is 1
9. $5(2c + 5)$
10. $7(3x - 2)$
11. $5(2r + 3)$
12. only common factor is 1

Skill 21

Quick Check

1. a) $4(2a - 1)$ 2. c) $3(4 + y)$

Practice on Your Own

3. d) $2(2n - 5)$ 4. b) $33d - 66$
5. a) $6(5 + 3p)$ 6. a) $56r + 16$

Skill 22

Quick Check

1. $\frac{22}{x}$, or $22 \div x$ 2. $x + 6$, or
3. $x - 13$ 4. $19x$

Practice on Your Own

5. $72x$ 6. $\frac{x}{22}$, or $x \div 12$
7. $2x - 8$ 8. $x + 1.5$
9. $3x - 12$ 10. $\frac{1}{2}x + 1$

Skill 23

Quick Check

1. $x = 9$ 2. $x = 8$ 3. $x = 5$

Practice on Your Own

4. $x = 50$ 5. $x = \frac{3}{4}$ 6. $x = 4.5$
7. $x = 4\frac{3}{4}$ 8. $x = 34$ 9. $x = 3$

Skill 24

Quick Check

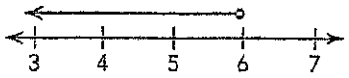
1. False 2. True 3. False

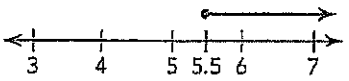
Practice on Your Own

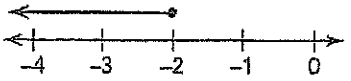
4. True 5. False 6. True
7. False

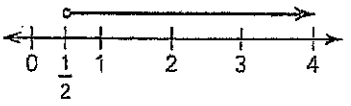
Skill 25

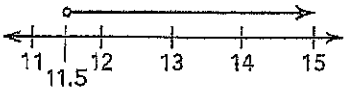
Quick Check

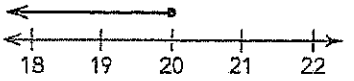
1. 

2. 

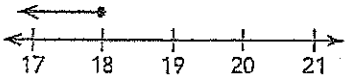
3. 

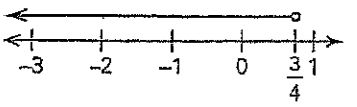
4. 

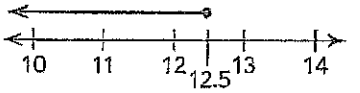
5. 

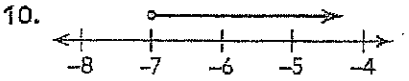
6. 

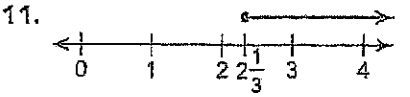
Practice on Your Own

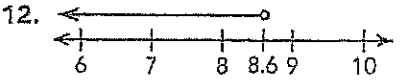
7. 

8. 

9. 

10. 

11. 

12. 

Skill 26

Quick Check

1. <
2. >
3. $x > 4$
4. $x \leq 10$

Practice on Your Own

5. =
6. >
7. $x \geq 25$
8. $x < 35$
9. $x \leq 80$
10. $x > 24$

Skill 27

Quick Check

1. 5 to 6, 5 : 6, $\frac{5}{6}$
2. 2 to 3, 2 : 3, $\frac{2}{3}$

Practice on Your Own

3. 1 : 4
4. 5 : 2
5. 1 : 7
6. 4 : 1
7. 2 : 1
8. 5 : 18

Skill 28

Quick Check

1. No
2. Yes
3. No; samples: 3 : 4, 9 : 12
4. Yes; samples: 6 to 14, 9 to 21
5. No; samples: 3 to 5, 12 to 20

Practice on Your Own

5. No; samples: 3 to 5, 12 to 20
6. Yes; samples: $\frac{4}{10}, \frac{6}{15}$
7. No; samples: $\frac{2}{9}, \frac{18}{81}$
8. Yes; samples: $\frac{2}{16}, \frac{3}{24}$
9. No; samples: 2 : 3, 8 : 12
10. Yes; samples: 42 : 16, 63 : 24
11. Yes; samples: 8 : 30, 12 : 45
12. No; samples: 1 to 3, 2 to 6
13. No; samples: 5 to 1, 60 to 12
14. No; samples: 3 to 8, 12 to 32

Skill 29

Quick Check

1. 9 mi/h
2. Ms. Lu

Practice on Your Own

3. white: \$0.85 per lb; red: \$0.89 per lb
4. Write-On: \$0.50 per pen; Ink: \$0.50 per pen
5. Jenna
6. salami

Skill 30

Quick Check

1. (4, 4)
2. (7, 6)
3. (5, 0)
4. (0, 3)

Practice on Your Own

5. (5, 3)
6. (2, 8)