Name _____ Date _____

Skills Maintenance
Rational Number Conversions

Activity 1

Fill in the missing parts in the table.

Fraction	Decimal Number	Percent
$\frac{4}{16}$	0.25	
	0.57	57%
$\frac{3}{15}$		20%
$\frac{2}{10}$	0.20	
	0.77	77%

Patterns

Activity 2

Fill in the missing numbers in each of the patterns.

1. 25, 30, _____ , 40, 45, 50, 55, 60, _____

2. _____ , 24, 27, _____ , 33, 36, 39, _____ , 45

3. 6, 8, 10, _____ , 14, _____ , 18, _____ , 22, 24

4. 6, 12, 18, 24, _____ , 36, 42, _____ , 54
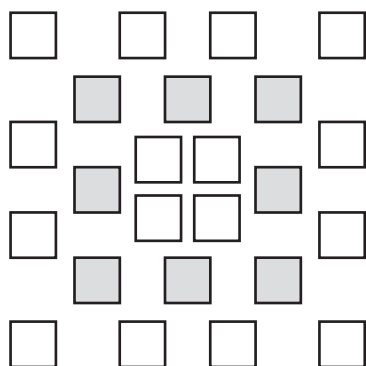
Name _____ Date _____

Unit Review
Algebraic Patterns

Activity 1

Fill in the table that shows how many squares are in each ring of the pattern. Then write algebraic expressions to show the relationship in the table. Find how many squares are on the 6th ring of this pattern.

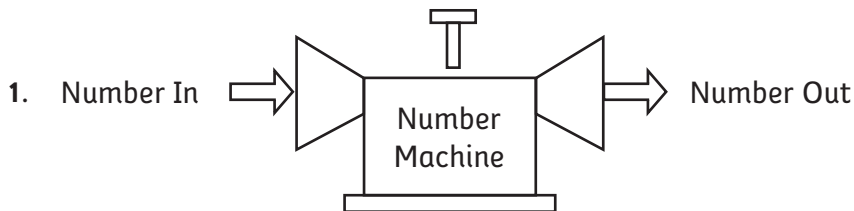What is the algebraic expression going out? _____
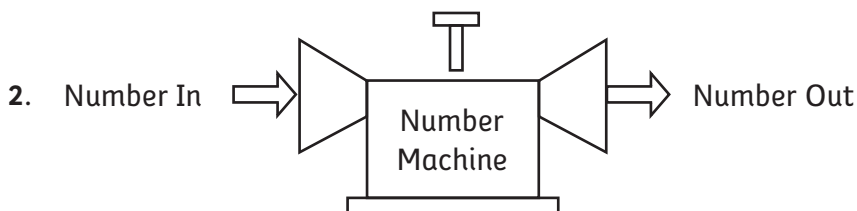
How many squares are there in the 6th ring? _____

Name _____ Date _____

Activity 2

Write the numbers that go in the missing blanks in the table. Then write the expression that represents the pattern.
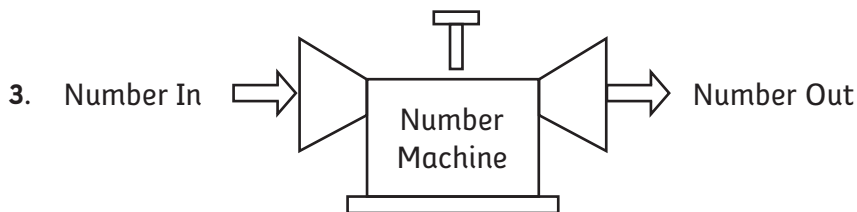
1. Number In ⟹ Number Machine ⟹ Number Out

   Algebraic expression _____

In	Out
50	41
11	2
23	
15	
83	74

2. Number In ⟹ Number Machine ⟹ Number Out

   Algebraic expression _____

In	Out
7	35
2	10
20	
1	
15	75

3. Number In ⟹ Number Machine ⟹ Number Out

   Algebraic expression _____

In	Out
15	225
8	64
10	
7	
9	81

Name _____ Date _____

Activity 3

Tell what each number is divisible by, according to the divisibility rules you've learned. Then state if the number is even or odd. Tell whether it is prime.
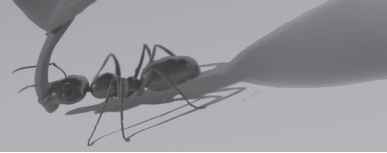
1. 15 _____

2. 23 _____

3. 36 _____

4. 30 _____

5. 14 _____

6. 21 _____

7. 100 _____

8. 41 _____

Name _____ Date _____

Unit 4 Review
Ratios

Activity 1

Select the setup that matches the type of problem asked for. Then explain how you know it's that kind of problem.

1. Which one of these problems is set up as a unit rate problem?

   (a) $\dfrac{\text{Inches}}{\text{miles}}$ $\dfrac{5}{50} = \dfrac{1}{x}$

   (b) $\dfrac{\text{balloons}}{\text{cost}}$ $\dfrac{10}{\$5} = \dfrac{20}{\$7}$

   (c) $\dfrac{\text{bubble gum}}{\text{cost}}$ $\dfrac{5}{\$2} = \dfrac{10}{x}$

   Explain how you know this problem is a unit rate problem.

   _____

   _____

2. Which one of these problems is set up as a proportion problem?

   (a) $\dfrac{\text{Buses}}{\text{students}}$ $\dfrac{2}{24} = \dfrac{1}{a}$

   (b) $\dfrac{\text{batteries}}{\text{cost}}$ $\dfrac{24}{\$12} = \dfrac{48}{b}$

   (c) $\dfrac{\text{Candy}}{\text{cost}}$ $\dfrac{25 \text{ pieces}}{\$5} = \dfrac{50 \text{ pieces}}{\$7.50}$

   Explain how you know this problem is a proportion problem.

   _____

   _____

3. Which is set up as a comparison of ratios problem?

   (a) $\dfrac{\text{Soft Drinks}}{\text{cost}}$ $\dfrac{20}{\$1} = \dfrac{10}{a}$

   (b) $\dfrac{\text{Highlighters}}{\text{cost}}$ $\dfrac{10}{\$5} = \dfrac{20}{\$10}$

   (c) $\dfrac{\text{inches}}{\text{miles}}$ $\dfrac{1}{x} = \dfrac{5}{500}$

   Explain how you know it is a comparison of ratios problem.

   _____

   _____

Name _____ Date _____

Activity 2

Solve the ratio problems. Show your work in the space provided.

1. You can buy gym socks this weekend at the big Athletic Trax store sale. Socks are three pairs for $10 or seven pairs for $30. Which is the better deal?

   _____

   _____

2. Your family stops at the gas station to fill up their tank with gas. The cost of a gallon of gas is $3.04 per gallon. About what will it cost for nine gallons of gas?

   _____

   _____

3. When you make lemonade, all you have to do is add eight ounces of syrup with 20 ounces of water. The bottle of lemonade syrup is 24 ounces. How much water would you need to add if you wanted to use the entire bottle of syrup?

   _____

   _____

4. The builders who are working to fix the bridge are mixing concrete. They mix the dry ingredients first, and then they add water. A mixture of concrete has sand, cement, and gravel. Here are the ingredients:

   1 pound cement

   2 pounds sand

   5 pounds gravel

   What is the percent of sand to the total mixture?

   _____

   What is the ratio of cement to gravel? _____

   If they want to use 10 pounds of sand for the mixture, how many pounds of cement do they need? _____

Name _____ Date _____

Activity 3

Solve the increasing and decreasing rate problems involving daylight. Make ratios from the word problems, then convert them to decimal numbers and percents. Show your work.

1. Jacksonville, Florida gets about 10 hours of daylight in February. It gets four more hours of daylight from February to May. Juneau, Alaska gets about six hours of daylight in December. It also gets four more hours of daylight from December to February.

    Is the percent of increase the same for both cities? _____

    In which city does the amount of daylight make a bigger difference? _____

    _____

    _____

2. Grand Rapids, Michigan loses five hours of daylight from June to November. It gets about 15 hours of daylight in June. Anchorage, Alaska loses about four hours of sunlight from October to December. It gets about 10 hours of daylight in October.

    Is the percent of decrease the same for both cities? _____

    In which city does losing daylight make a bigger difference? _____

    _____

    _____

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Use the mBook *Study Guide* to review lesson concepts.