Getting Ready for 5th Grade

Mathematics Summer Packet

Ms. Clancy

Directions: Complete all the <u>EVEN</u> numbers to the best of your ability. Use the examples to help you remember how to solve the problems. Have a great summer! See you in September!

Add Dollars and Cents

To add money amounts, line up the decimal points and then add as with whole numbers.

Find the sum.

$38.37 + $41.47

Step 1

Write the problem on grid paper. Align the digits by place value. Think of pennies as hundredths and dimes as tenths.

		T	O		T	H
	$	3	8	.	3	7
+	$	4	1	.	4	7

Step 2

Add the hundredths. Regroup 14 hundredths as 1 tenth 4 hundredths. Write 1 in the tenths column.

Then add the tenths.

		T	O		T	H
					1	
	$	3	8	.	3	7
+	$	4	1	.	4	7
					8	4

Step 3

Add the ones and then add the tens. Regroup if necessary.

Write the decimal point and dollar sign.

		T	O		T	H
					1	
	$	3	8	.	3	7
+	$	4	1	.	4	7
	$	7	9	.	8	4

So, $38.37 + $41.47 = **$79.84**.

Find the sum.

1. $7.81
    + $5.09

2. $35.06
    + $51.48

3. $ 5.32
    + $85.44

4. $40.36
    + $17.45

5. $37.60
    + $ 9.04

6. $80.26
    + $19.31

7. $48.04
    + $64.65

8. $52.66
    + $50.48

9. $8.47
    + $7.33

10. $69.19
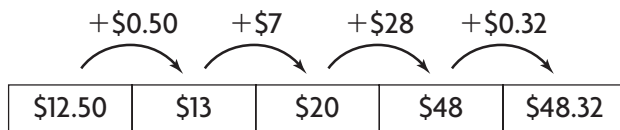   + $ 4.95

11. $24.70
    + $62.33

12. $10.00
    + $25.75

Subtract Dollars and Cents

You can count up to find a difference.

Find the difference.

$48.32 − $12.50

Step 1 Start with $12.50, the amount being subtracted.
Count up until you reach $48.32. Record each amount that
you use to count up.

+$0.50   +$7   +$28   +$0.32

$12.50	$13	$20	$48	$48.32

Step 2 Add the distances between counts to find the difference.

$0.50 + $7.00 + $28.00 + $0.32 = $35.82

So, $48.32 − $12.50 = **$35.82**.

Find the difference.

1.	$7.22 − $4.02	**2.**	$36.06 − $34.48	**3.**	$80.00 − $35.75	**4.**	$98.36 − $21.15
5.	$47.90 − $ 8.34	**6.**	$60.24 − $14.10	**7.**	$78.54 − $ 9.62	**8.**	$52.00 − $10.98
9.	$75.32 − $24.32	**10.**	$85.09 − $43.56	**11.**	$90.50 − $76.80	**12.**	$12.13 − $ 4.58

Algebra • Order of Operations

The **order of operations** is a set of rules that gives the order in which calculations are done in an expression.

Use the order of operations to find the value of the expression. Show each step.

Order of Operations
1. First, perform operations inside the parentheses.
2. Then, multiply and divide from left to right.
3. Last, add and subtract from left to right.

$8 + (10 \div 5) - 4$

Step 1	**Step 2**	**Step 3**
First divide. **Think:** $10 \div 5 = 2$	Then add and subtract from left to right. **Think:** $8 + 2 = 10$	Subtract.
$8 + (10 \div 5) - 4$ $8 + 2 - 4$	$8 + 2 - 4$ $10 - 4$	$10 - 4 = 6$

So, $8 + (10 \div 5) - 4 = 6$.

Write *correct* if the operations are listed in the correct order.
If not correct, write the correct order of operations.

1. $(9 \div 3) \times 4$ multiply, divide

2. $15 - (8 \div 2)$ subtract, divide

_____

_____

3. $(36 + 10) \times 3$ multiply, add

4. $(16 - 4) \div 2 + 5$ subtract, divide, add

_____

_____

Follow the order of operations to find the value of the expression.
Show each step.

5. $(6 \times 7) + 3$ **6.** $(8 + 12) \div 4$ **7.** $(20 - 5) \times 3 + 4$ **8.** $18 + 6 + (16 \div 4)$

_____

Divide by Multiples of Ten

You can use basic facts and patterns to divide by multiples of ten.

Divide. Use a pattern to help.

$6,000 \div 30$

Step 1	**Step 2**	**Step 3**
Look for a basic fact.	Use the basic fact to find a division sentence with the same divisor as the original problem.	Now look for a pattern.
$6,000 \div 30$		**Think:** If the number of zeros in the dividend increases, the number of zeros in the quotient increases by the same number.
Think: $6 \div 3$	$6,000 \div 30$ ← divisor	
The basic fact is $6 \div 3 = 2.$	**Think:** $6 \div 3 = 2$, so $60 \div 30 = 2.$	dividend → $60 \div 30 = 2$ ← quotient $600 \div 30 = 20$ $6,000 \div 30 = 200$

So, $6,000 \div 30 = 200$.

Divide. Use a pattern to help.

1. $1,600 \div 20 =$ _____   **2.** $2,400 \div 80 =$ _____   **3.** $3,600 \div 40 =$ _____

4. $1,200 \div 30 =$ _____   **5.** $8,000 \div 40 =$ _____   **6.** $2,000 \div 50 =$ _____

7. $6,000 \div 10 =$ _____   **8.** $4,900 \div 70 =$ _____   **9.** $5,400 \div 60 =$ _____

Model Division with 2-Digit Divisors

You can use models to divide a whole number by a 2-digit divisor.

Use base-ten blocks to find 143 ÷ 13.

Step 1 Use base-ten blocks to model the dividend, _143_.
Show 143 as _1_ hundred _4_ tens _3_ ones.

Remember: Each large square represents 100,
each line represents 10, and each small circle represents 1.

Step 2 The divisor is _13_. Divide the blocks equally
between 13 groups. Since you cannot share
the one-hundred square equally between the
13 groups, first break it into 10 tens. Then you will
have _14_ tens, altogether. Share the tens equally
among 13 groups.
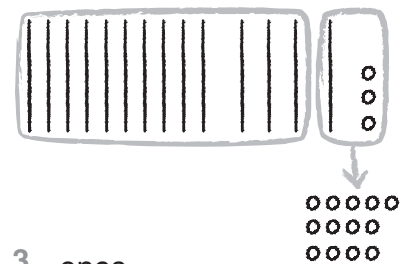
Step 3 After completing Step 2, you will have _1_ ten and _3_ ones
left over. Since you cannot share the 10 equally between
the 13 groups, break it into 10 ones. Then you will have
_13_ ones, altogether. Share the 13 ones equally among the 13 groups.
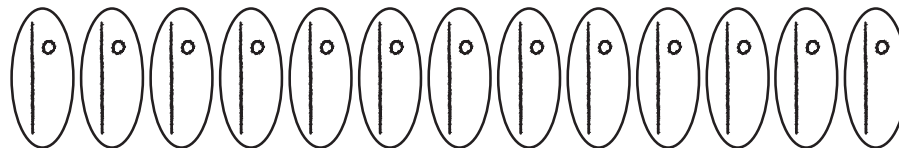
Each group contains _1_ ten and _1_ one, or 11. So 143 ÷ 13 = _11_.

Use base-ten blocks to divide.

1. 65 ÷ 5 = _____

2. 84 ÷ 14 = _____

3. 120 ÷ 8 = _____

4. 96 ÷ 16 = _____

5. 168 ÷ 12 = _____

6. 99 ÷ 33 = _____

Place Value Through Millions

You can use a place-value chart to help you read and write numbers through millions.

You can group the digits in a whole number into sections called periods.
Each period has 3 digits.

Each digit in a whole number has both a place and a value. In the place value chart below, the digit 3 is in the hundred thousands place. So its value is $3 \times 100,000$, or 300,000.

Periods

Millions			Thousands			Ones		
Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	8	7	3	1	4	6	5	9

Use the place-value chart to read and write the number in standard form, word form, and expanded form.

Standard Form: 287,314,659

Word Form: two hundred eighty-seven million, three hundred fourteen thousand, six hundred fifty-nine

Expanded Form: 200,000,000 + 80,000,000 + 7,000,000 + 300,000 + 10,000 + 4,000 + 600 + 50 + 9

Read and write the number in two other forms.

1. sixty million, forty thousand, two hundred twenty-nine

_____

_____

_____

2. 8,000,000 + 300,000 + 2,000 + 100 + 8

_____

_____

_____

_____

Decimals and Place Value

You can write decimals, like whole numbers, in standard form, word form, and expanded form.

In a place-value chart, whole numbers are to the left of the decimal point. Decimal amounts are to the right of the decimal point. The value of each place is one-tenth, or $\frac{1}{10}$, of the place to its left.

When you write a decimal in word form, write the decimal point as "and."

Write the decimal 12.34 in word form and expanded form.

Start by writing 12.34 in a place-value chart. First, align the decimal point with the decimal in the chart. Then place the digits.

Hundreds	Tens	Ones	.	Tenths	Hundredths
	1	2	.	3	4
	$\underline{1} \times 10$	$\underline{2} \times 1$	.	$\underline{3} \times \frac{1}{10}$	$\underline{4} \times \frac{1}{100}$
	10	2	.	$\frac{3}{10}$	$\frac{4}{100}$

Word form: 12.34 ←——— Two decimals indicate hundredths.

Twelve and thirty-four _hundredths_

Expanded Form: Use the last row of the chart to help you write the decimal in expanded form.

12.34 = 10 + _2_ + _0.3_ + 0.04

Read and write the decimal in two other forms.

1. eight and seven tenths

2. 10 + 3 + 0.9 + 0.05

_____

_____

_____

_____

Place Value to Compare Decimals

You can use a place-value chart to help you compare decimals.

Use a place-value chart to compare the decimals. Write <, >, or =.

4.28 4.23

Step 1 Write both decimals in a place-value chart.
Line up each place and the decimal.

Step 2 Compare the numbers in each place, starting with
the numbers in the ones place and working your way right.

Ones	.	Tenths	Hundredths
4	.	2	8
4	.	2	3

$4 = 4$ $\qquad$ $2 = \underline{2}$ $\qquad$ $8 > \underline{3}$

Step 3 Since 8 is greater than 3, 4.28 is greater than 4.23.

So, $4.28 > 4.23$.

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1. Use the place-value chart below to compare the decimals.
Write <, >, or =.

Ones	.	Tenths	Hundredths
8	.	9	2
8	.	9	7

$8 = 8$ $\qquad$ $9 = \underline{\quad}$ $\qquad$ $2 < \underline{\quad}$

So, $8.92 < 8.97$.

Compare the decimals. Write <, >, or =.

2. 6.87 ◯ 6.80 $\qquad$ **3.** 9.17 ◯ 9.19 $\qquad$ **4.** 5.73 ◯ 5.78 $\qquad$ **5.** 1.23 ◯ 1.22

6. 2.56 ◯ 2.5 $\qquad$ **7.** 3.7 ◯ 3.70 $\qquad$ **8.** 7.22 ◯ 7.2 $\qquad$ **9.** 4.4 ◯ 4.04

Decompose Multiples of 10, 100, 1,000

You can decompose a multiple of 10, 100, or 1,000 by finding its factors.

- To decompose a multiple of 10: rewrite it as the product of 10 and another number.
- To decompose a multiple of 100: rewrite it as the product of 100 and another number.
- To decompose a multiple of 1,000: rewrite it as the product of 1,000 and another number.

Decompose 3,200.

One Way Use mental math and a pattern.

$3,200 = \underline{3,200} \times 1$

$3,200 = \underline{320} \times 10$

$3,200 = \underline{32} \times 100$

So $3,200 = 32 \times 100$.

Another Way Use place value.

$3,200 = 32 \text{ hundreds} = 32 \times \underline{100}$

So $3,200 = 32 \times 100$.

1. Complete the exercise below to decompose 3,600.

$3,600 = \underline{\hspace{2cm}} \times 1$

$3,600 = \underline{\hspace{2cm}} \times 10$

$3,600 = \underline{\hspace{2cm}} \times 100$

2. Complete the exercise below to decompose 870.

$870 = \underline{\hspace{2cm}} \text{ tens} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$

Decompose each number.

3. $90 = \underline{\hspace{2cm}}$ **4.** $5,600 = \underline{\hspace{2cm}}$ **5.** $3,000 = \underline{\hspace{2cm}}$

Name _____

Number Patterns

You already know how to use a rule and the first term to write a sequence. Now you will use multiplication to describe a pattern.
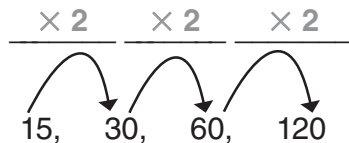
Stephen is saving his money to buy a car. The table shows how much money he has saved at the end of each month. If the pattern continues, how much money will Stephen have saved after months 5 and 6?

Number of Months	1	2	3	4
Total Amount Saved ($)	15	30	60	120

Step 1 Describe the sequence.

Think: How do I get from one term to the next?

Try multiplying by 2, since $15 \times 2 = 30$.

$$\times 2 \quad \times 2 \quad \times 2$$

15,   30,   60,   120

Step 2 Write a rule that describes how much money Stephen has saved at the end of each month.

Rule: ___Multiply by 2.___

Step 3 Use the rule to find the next two terms in the sequence.

$$\times 2 \quad \times 2 \quad \times 2 \quad \times 2 \quad \times 2$$

15,   30,   60,   120   240,   480
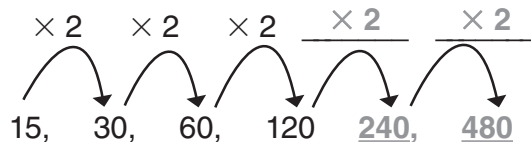
So, at the end of month 5, Stephen will have saved $240.
At the end of month 6, have will have saved $480.

Describe the pattern. Then find the next two numbers in the pattern.

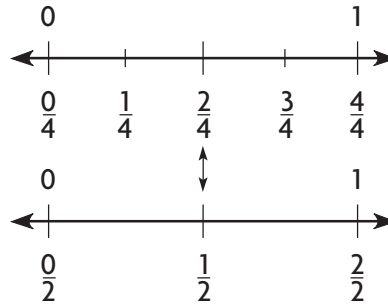**1.** 2, 10, 50, _____, _____

2. 2, 6, 18, _____, _____

_____

_____

Name _____

Add Related Fractions

You can add fractions with different denominators using a number line.
First find an equivalent fraction so that both fractions have the same denominator.

Add $\frac{1}{4} + \frac{1}{2}$. Use a number line to help.

Step 1 Draw a number line from 0 to 1. Divide it
into 4 equal parts. Label the number line
in fourths.

Step 2 Draw another number line directly below
the first number line. Line up the 0s and
1s. Divide the second number line into 2
equal parts. Label it.

Step 3 Find how many fourths are equal to $\frac{1}{2}$.

$$\frac{1}{2} = \frac{2}{4}$$

Step 4 Add. Use the equivalent fraction for $\frac{1}{2}$.

$$\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4}$$

$$= \frac{3}{4}$$

So, $\frac{1}{4} + \frac{1}{2} = \frac{3}{4}$.
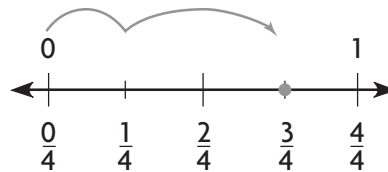
Add. Use a number line to help.

1. $\frac{3}{4} + \frac{1}{8} = $ _____

2. $\frac{1}{6} + \frac{2}{3} = $ _____

3. $\frac{2}{5} + \frac{1}{10} = $ _____

4. $\frac{4}{8} + \frac{1}{2} = $ _____

5. $\frac{1}{2} + \frac{1}{6} = $ _____
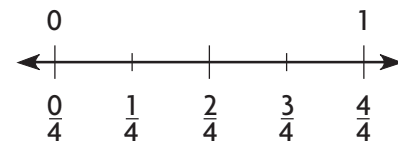
6. $\frac{4}{12} + \frac{1}{4} = $ _____

Name _____

Subtract Related Fractions

You can subtract fractions with different denominators using a number line.
First find an equivalent fraction so that both fractions have the same denominator.

Subtract $\frac{3}{4} - \frac{1}{8}$. Use a number line to help.

Step 1 Draw a number line from 0 to 1. Divide it into 4 equal parts. Label the number line in fourths.

Step 2 Draw another number line directly below the first number line. Line up the 0s and 1s. Divide the second number line into 8 equal parts. Label it.

Step 3 Find how many eighths are equal to $\frac{3}{4}$.

$$\frac{3}{4} = \frac{6}{8}$$

Step 4 Add. Use the equivalent fraction for $\frac{3}{4}$.

$$\frac{3}{4} - \frac{1}{8} = \frac{6}{8} - \frac{1}{8}$$
$$= \frac{5}{8}$$

So, $\frac{3}{4} - \frac{1}{8} = \frac{5}{8}$.
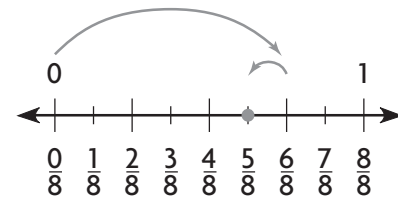
Subtract. Use a number line to help.

1. $\frac{5}{6} - \frac{1}{3} =$ _____

2. $\frac{1}{2} - \frac{1}{4} =$ _____

3. $\frac{5}{8} - \frac{1}{2} =$ _____

4. $\frac{6}{10} - \frac{2}{5} =$ _____

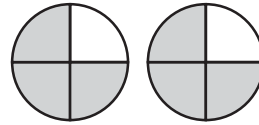**5.** $\frac{7}{12} - \frac{1}{3} =$ _____

6. $\frac{6}{8} - \frac{3}{4} =$ _____

Compare Fraction Products

When a fraction less than one is multiplied by a whole number, is the product less than or greater than the fraction?

Is the product of $\frac{3}{4} \times 2$ less than or greater than $\frac{3}{4}$?

Step 1 Show two groups of $\frac{3}{4}$.
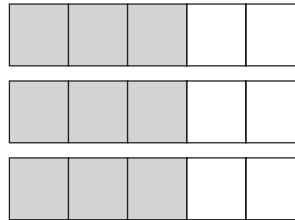
The model shows $\frac{6}{4}$ shaded.

Step 2 Compare. The product $\frac{6}{4}$ is ___greater than___ $\frac{3}{4}$.

So, the product of $\frac{3}{4} \times 2$ is greater than $\frac{3}{4}$.

When a whole number is multiplied by a fraction less than one, is the product less than or greater than the whole number?

Is the product of $3 \times \frac{3}{5}$ less than or greater than 3?

Step 1 Show three groups of $\frac{3}{5}$.

The model shows $\frac{9}{5}$ shaded.

Step 2 Compare. The product $\frac{9}{5}$ is ___less than___ 3.

So, the product of $3 \times \frac{3}{5}$ is less than 3.

Complete each statement with *greater than* or *less than*.

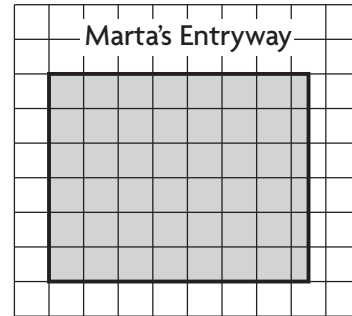**1.** $2 \times \frac{5}{6}$ will be _____ $\frac{5}{6}$.   **2.** $\frac{3}{8} \times 2$ will be _____ 2.

3. $3 \times \frac{2}{5}$ will be _____ 3.   **4.** $\frac{2}{3} \times 4$ will be _____ $\frac{2}{3}$.

Area and Tiling

In the model, whole tiles are shaded, and some half tiles are shaded. You can combine the areas of half tiles and whole tiles to find the total area.

Marta's Entryway

1 square = 4 square feet

Find the area of the entryway. Write the area in square feet.

Step 1   Count the number of whole tiles. There are **42** whole tiles.

Step 2   Count the number of half tiles. There are **6** half tiles.

Think: 2 half tiles = 1 whole tile
6 half tiles = 3 whole tiles

Step 3   Use the total number of whole tiles to find the area.

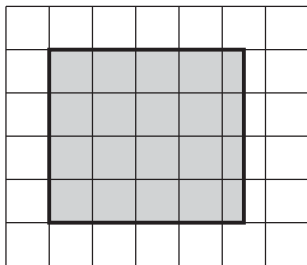42 + 3 = **45** whole tiles

Think: 1 tile = 4 square feet

Multiply the number of whole tiles by 4 to find the area.

45 × **4** = 180

So, the area of Marta's entryway is **180 square feet.**

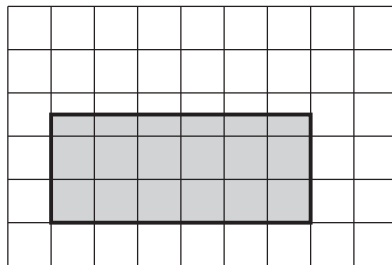**Find the area of each shaded shape. Write the area in square units.**

1.

1 square = 4 square feet

2.

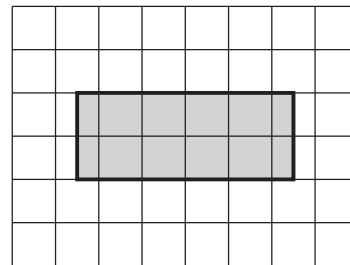1 square = 9 square meters

3.

1 square = 16 square miles

_____   _____   _____

Name _____

Multiply Three Factors

Step 1

Simplify the problem. Rewrite $2 \times (14 \times 6)$ as a product of two factors.

$2 \times (14 \times 6) = 2 \times (\underline{6} \times 14)$ Commutative Property

$= (2 \times \underline{6}) \times 14$ Associative Property

$= \underline{12} \times 14$

So, $2 \times (14 \times 6) = 12 \times 14$.

Step 2

Multiply.

```
     12
  ×  14
─────────
     48  ⟵   4 × 12
  + 120  ⟵   10 × 12
─────────
    168  ⟵   Add.
```

So, $2 \times (14 \times 6) = 168$.

> **Remember**
> Commutative Property of Multiplication
> You can multiply factors in any order and still get the same product.
> Example: $2 \times 3 = 3 \times 2$
> Associative Property of Multiplication
> You can group factors in any order and still get the same product.
> Example:
> $2 \times (3 \times 4) = (2 \times 3) \times 4$

Find each product.

1. $3 \times (16 \times 4) =$

2. $(4 \times 14) \times 6 =$

3. $5 \times (13 \times 5) =$

_____

_____

_____

4. $(16 \times 7) \times 3 =$

5. $7 \times (18 \times 6) =$

6. $(12 \times 8) \times 6 =$

_____

_____
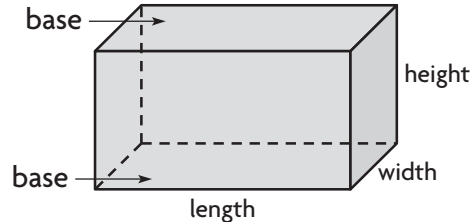
_____

Name

Find Area of the Base

A **rectangular prism** is a solid figure that has three-dimensions: length, width, and height. A rectangular prism has two **bases**. The bases are the same size and shape and are opposite each other. The base shape of a rectangular prism is a rectangle or a square.

base ——→
height
base ——→
width
length

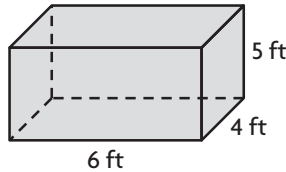You can use the area formulas for a rectangle and a square to find the area of the base of a rectangular prism.

Find the area of the base of the rectangular prism.

Step 1 Identify the base shape.

The length is __6__ feet.

The width is __4__ feet.

5 ft
4 ft
6 ft

The base shape is a __rectangle__.

Step 2 Find the area of the base shape.

$A = l \times w$ Think: Use the area formula for a rectangle.

$= \underline{6} \times \underline{4}$

$= \underline{24}$ square feet

> **Remember**
>
> Area of a rectangle:
> $A = b \times h$ or $A = l \times w$
> Area of a square:
> $A = s \times s$

So, the area of the base is __24 square feet__.

Find the area of the base of the rectangular prism.

1.
4 in.
3 in.
3 in.

_____

2.
3 ft
4 ft
8 ft

_____

3.
5 m
5 m
6 m

_____

4.
3 cm
9 cm
4 cm

_____

5.
4 yd
8 yd
8 yd

_____

6.
7 in.
7 in.
7 in.

_____