

Warmup:

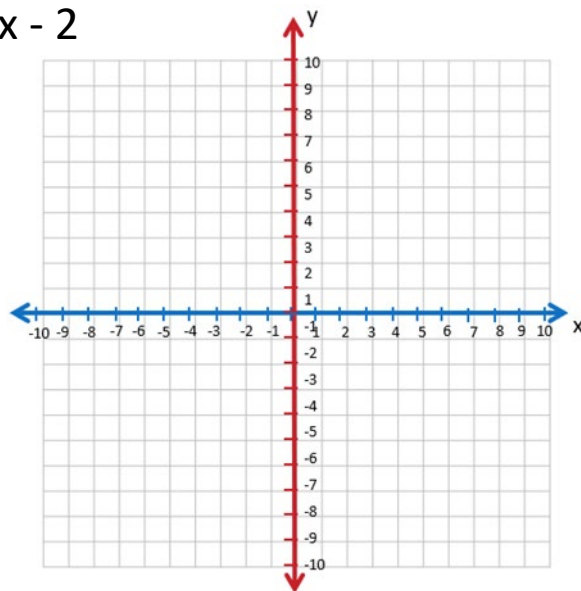
1. The Slope-intercept form of a linear equation is _____
m is the _____ b is the _____

2. The slope is the _____ of the x term.

3. Slope is defined as the _____

5. $\frac{p}{3} + 7 = 22$

4. $Y = -\frac{1}{4}x - 2$



I. Writing Equations in Slope-Intercept Form

Slope-Intercept Form: $y = mx + b$

$$Y + 5 = 3x$$

$$6y = 4x$$

6. $y - \frac{3}{7}x = -8$

7. $Y + 9 = \frac{8}{10}x$

II. Interpreting a Linear Equation

1. Write the equation in Slope-Intercept Form: $y = mx + b$
2. Determine the slope and y-intercept

$$5y - 7 = 3x$$

$$8y = 3x$$

- 8.** Give the slope of the linear equation.

$$10y = -7x + -30$$

9. $y + 4 = \frac{8}{3}x$

Y-intercept: _____

Ordered pair: (_____ , _____)

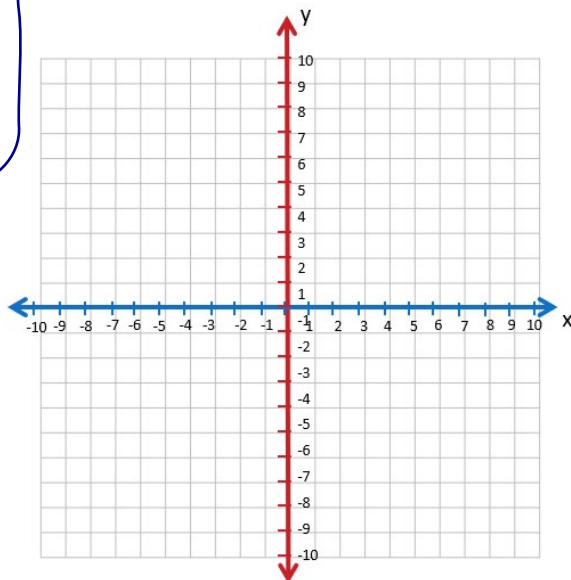
The slope is: _____

III. Graphing Linear Equations

1. Write the equation in Slope-Intercept Form: $y = mx + b$
2. Determine the slope and y-intercept
3. Graph the equation using the y-intercept and slope

Graph

$$3y - 9 = 2x$$

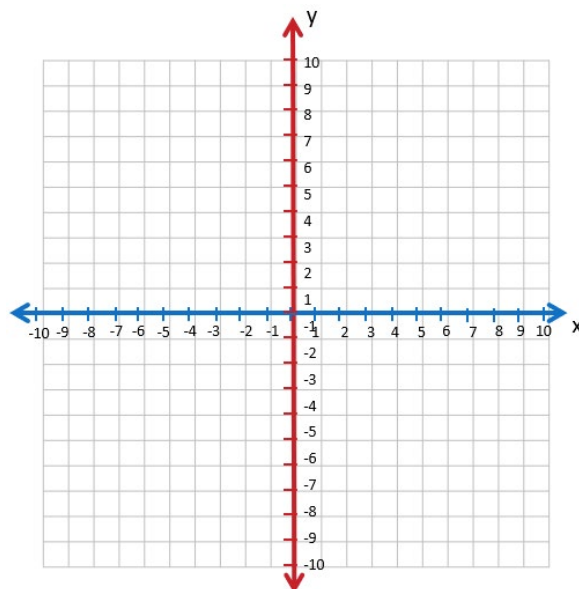


10. $2 = 2x - y$

Y-intercept: _____

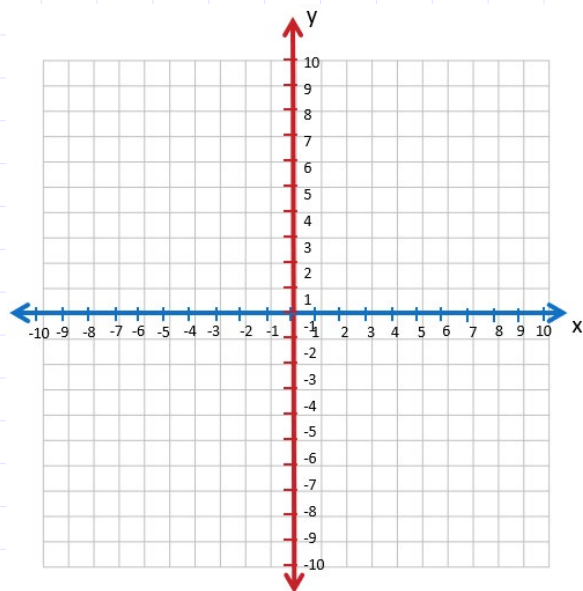
Ordered pair: (_____ , _____)

The slope is: _____

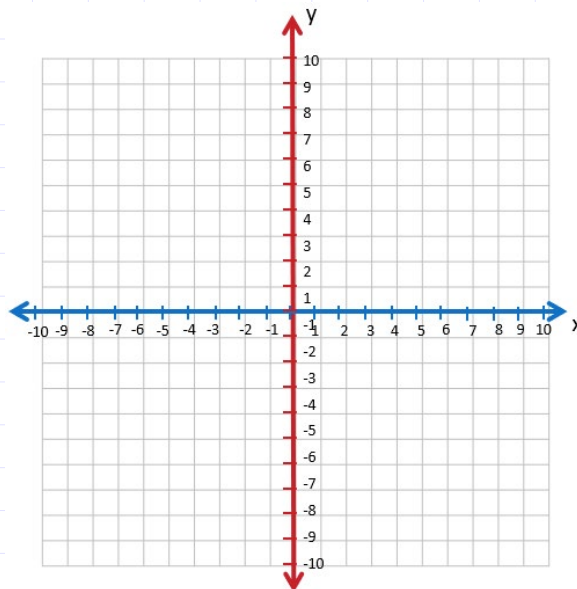


IV. Practice

11



12



13

14

15

16

17

18

19

20

21

22

23

24

Success Check # _____

Name:

Date:

Warmup:

1. Write two rates involving days and years

$\frac{\text{days}}{\text{years}}$ and $\frac{\text{years}}{\text{days}}$

2. Multiply $(\frac{10}{12})(\frac{60}{100})(\frac{5}{25})$

3. Convert: 13 mile = _____ yards

4. Convert: 7 feet = _____ yards

I. Cancel Unit Rates in Unit Conversions

Unit Conversions: Multiply by unit rates to cancel the units.

Each unit rate equals 1

Since 8 ounces = 1 cup $\frac{8 \text{ ounces}}{1 \text{ cup}} = 1$

To convert 30 ounces to pints, use Unit Rates to cancel the pints. Two unit rates will be needed.

$30 \text{ ounces} \cdot \frac{1 \text{ cup}}{8 \text{ ounces}} \cdot \frac{1 \text{ pint}}{2 \text{ cups}} = \underline{\hspace{2cm}} \text{ pints}$

Unit Conversions

Metric Equivalent Measures

10 mm = 1 cm
100 cm = 1 m
1000 m = 1 km

Us Customary Volume and Capacity Equivalent Measures

8 ounces = 1 cup
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon

Us Customary Time Equivalent Measures

60 seconds = 1 minute
60 minutes = 1 hour
24 hours = 1 day
7 days = 1 week
52 weeks = 1 year
365 days = 1 year
366 days = 1 leap year
12 months = 1 year

Us Customary Length Equivalent Measures

12 inches = 1 foot
3 feet = 1 yard
5280 feet = 1 mile
1760 yards = 1 mile

Us Customary to metric conversion

2.54 cm = 1 inch

Cross out the units

$10560 \text{ inches} \cdot \frac{1 \text{ foot}}{12 \text{ inches}} \cdot \frac{1 \text{ mile}}{5280 \text{ feet}} = \underline{\hspace{2cm}} \text{ miles}$

Cross out the units

$$2 \text{ km} \cdot \frac{1000 \text{ m}}{1 \text{ km}} \cdot \frac{10 \text{ cm}}{1 \text{ m}} = \underline{\hspace{2cm}} \text{ cm}$$

5. *Cross out the units*

$$3 \text{ hours} \cdot \frac{60 \text{ minutes}}{1 \text{ hour}} \cdot \frac{60 \text{ seconds}}{1 \text{ minute}} = \underline{\hspace{2cm}} \text{ seconds}$$

6. *Cross out the units*

$$14 \text{ years} \cdot \frac{365 \text{ days}}{1 \text{ year}} \cdot \frac{24 \text{ hours}}{1 \text{ day}} = \underline{\hspace{2cm}} \text{ hours}$$

II. Determine Which Unit Rates To Use

To determine which unit rates to use

- 1. Determine the unit rates to cancel the original units.**
- 2. Determine the unit rates that use the ending units.**
- 3. The unit rates to use will have the same 'third' units.**

Convert 100 cm to feet

The unit rates with cm:

2.54 cm = 1 inch
10 mm = 1 cm
100 cm = 1 m

The unit rates with feet:

12 inches = 1 foot
3 feet = 1 yard
5280 feet = 1 mile

2.54 cm = 1 inch

12 inches = 1 foot

$$\underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Determine the unit rates used to convert 10 gallons to pints.

_____ · _____ · _____ = _____

Determine the unit rate used to convert 4 inches to yards.

_____ · _____ · _____ = _____

7. Determine the unit rate used to convert 4 inches to yard

8. Determine the unit rate used to convert 12 quarts to cups

III. Convert Units Using Two Unit Rates

To convert 5 pints to ounces, use Unit Rates to cancel the pints. Two unit rates will be needed.

$$5 \text{ pints} \cdot \frac{2 \text{ cups}}{1 \text{ pint}} \cdot \frac{8 \text{ ounces}}{1 \text{ cup}} = \underline{\hspace{2cm}} \text{ ounces}$$

To convert 10 pints to gallons, use Unit Rates to cancel the cups. Two unit rates will be needed.

$$20 \text{ pints} \cdot \frac{1 \text{ quart}}{8 \text{ pints}} \cdot \frac{1 \text{ gallon}}{2 \text{ quarts}} = \underline{\hspace{2cm}} \text{ gallons}$$

Determine the unit rate used to convert 2 weeks to hours

9. Determine the unit rate used to convert 13 weeks to hours

10. Determine the unit rates used in the calculation, then convert 7 mm to m.

IV. Practice

11

12

13

14

15

16

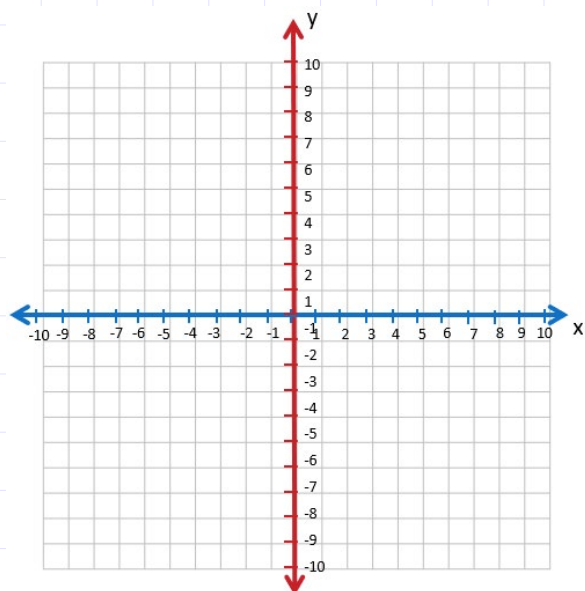
17

18

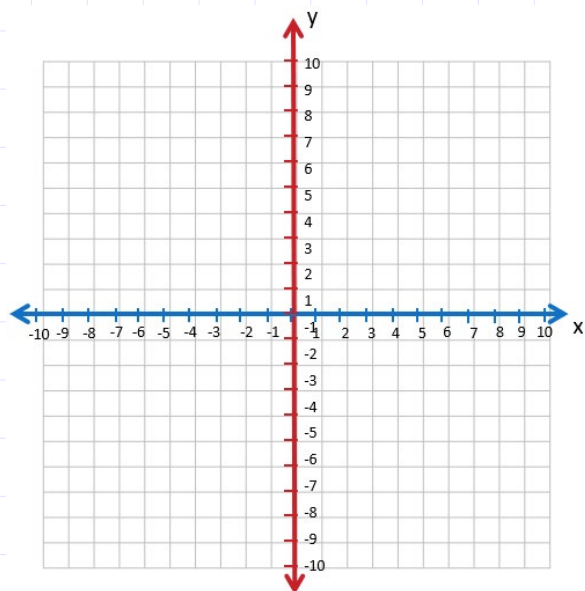
19

20

21



22



Success Check # _____

Name:

Date:

Warmup:

1. Write the names of each place value in the decimal number system.

_____ ones

2. Simplify:

$10^0 = \underline{\hspace{2cm}}$

$10^1 = \underline{\hspace{2cm}}$

$10^2 = \underline{\hspace{2cm}}$

$10^3 = \underline{\hspace{2cm}}$

$10^4 = \underline{\hspace{2cm}}$

3. Simplify:

$2^0 = \underline{\hspace{2cm}}$

$2^4 = \underline{\hspace{2cm}}$

$2^1 = \underline{\hspace{2cm}}$

$2^5 = \underline{\hspace{2cm}}$

$2^2 = \underline{\hspace{2cm}}$

$2^6 = \underline{\hspace{2cm}}$

$2^3 = \underline{\hspace{2cm}}$

$2^7 = \underline{\hspace{2cm}}$

I. The Base-2 or Binary Number System

The digits in the base-10 number system are: _____

The digits in the base-2 number system are: _____

Why is the number 234 read two hundred thirty-four? _____

Base-10 Number System

Base-2 Number System

To convert binary numbers to decimal numbers:

2^5	2^4	2^3	2^2	2^1	2^0
32	16	8	4	2	1

When there is a 1, add the place value to the final answer.

Determine the decimal value of the binary number 1011

Determine the decimal value of the binary number 10001

4. Fill in the blanks with numbers to make a true statement.

The binary number system has _____ digits, they are _____ and _____.

5. When a place value for a base-2 number has a _____, meaning it is _____.
Use the place value in the number.

6. Determine the decimal value of the binary number 11001

7.

II. Writing Decimal Numbers as a Binary or Base-2 Number

To convert decimal numbers to binary numbers:

1. Determine the largest place value that is less than or equal to the decimal number. Write a one in this place value.
2. Subtract the place value from the decimal number.
3. Write a one in the largest place value possible with the remaining amount, then subtract it from the remaining decimal amount
4. Continue this process until the remaining amount is zero.

2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
256	128	64	32	16	8	4	2	1

2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
256	128	64	32	16	8	4	2	1

Write the decimal number 17 as a base-2 number.

Write the decimal number 75 as a base-2 number.

Complete the table by writing the decimal numbers as binary numbers.

Decimal Number	Work Area	Binary Number
2		
3		8.
4		9.
5		10.
6		11.
7		12.
8		13.
9		14.
10		15.
11		16.
12		17.

18. Convert the decimal number 26 to a base-2 number.

19. Anna wants to express her math test score as a binary number. She scored a 100%. Write 100 as a binary number.

IV. Practice

20

21

22

23

24

25

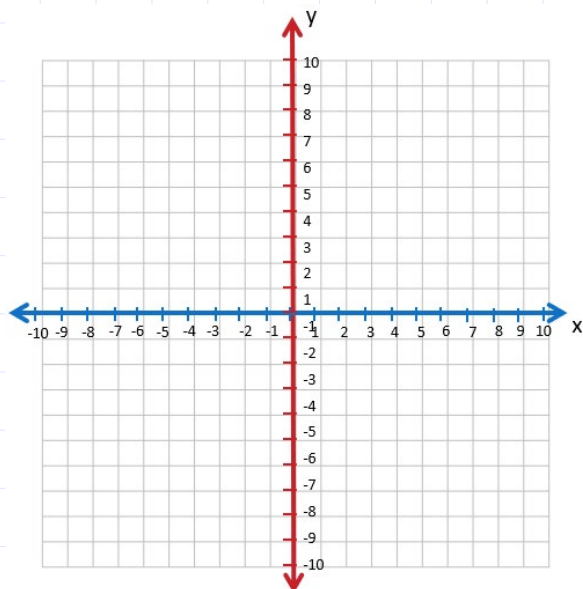
26

27

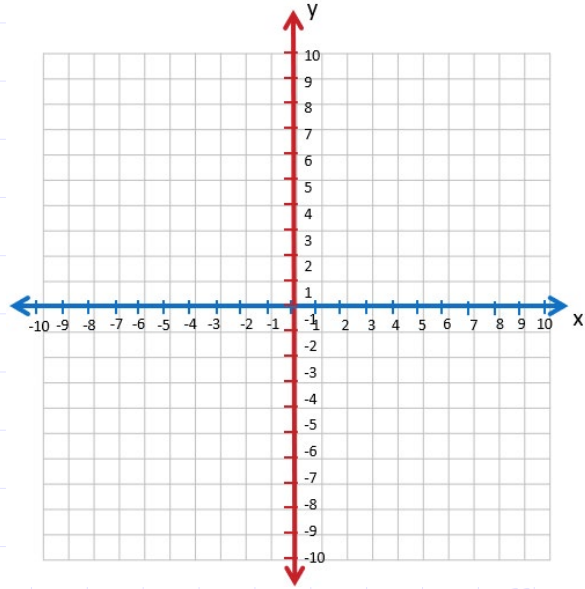
28

29

30



31



Success Check # _____

Name:

Date:

Warmup:

1. Evaluate:

$$\frac{4}{5} + \frac{2}{5} =$$

$$2. \quad \frac{7}{8} + \frac{2}{3} =$$

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

4. Compare each group of fractions with $<$, $>$, and $=$

$$\frac{1}{2} \bigcirc \frac{2}{3} =$$

$$\frac{1}{3} \bigcirc \frac{1}{4}$$

$$\frac{7}{8} \bigcirc \frac{6}{7}$$

5.

I. Subtraction of Mixed Numbers

1. If necessary, change the fractions to have equal denominators
2. Subtract the whole number part
3. Subtract the fraction part
4. Write the answer in simplest form

$$7\frac{3}{4} - 5\frac{2}{5} =$$

$$15\frac{3}{8} - 12\frac{1}{4} =$$

$$6. \quad 9\frac{5}{6} - 4\frac{3}{8} =$$

II. Subtraction of Mixed Numbers with Borrowing

1. If necessary, change the fractions to have equal denominators
2. Determine if the fractions can be subtracted.
If the **numerator of the subtrahend** is larger than the **numerator of the minuend**, then borrow from the whole number part.
3. Subtract the whole number part
4. Subtract the fraction part
5. Write the answer in simplest form

$$7\frac{2}{5} - 5\frac{3}{4}$$

$$7\frac{8}{20} - 5\frac{15}{20}$$

$$6\overset{28}{\underset{8}{7}}\frac{8}{20} - 5\frac{15}{20}$$

$$6 - 5\frac{28-15}{20}$$

$$1\frac{13}{20}$$

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

$$7. 8\frac{4}{7} - 3\frac{7}{8} =$$

8.

III. Practice

9



10



11



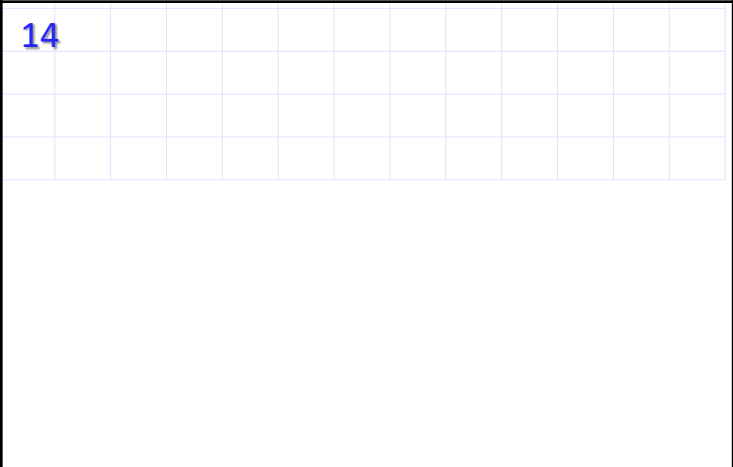
12



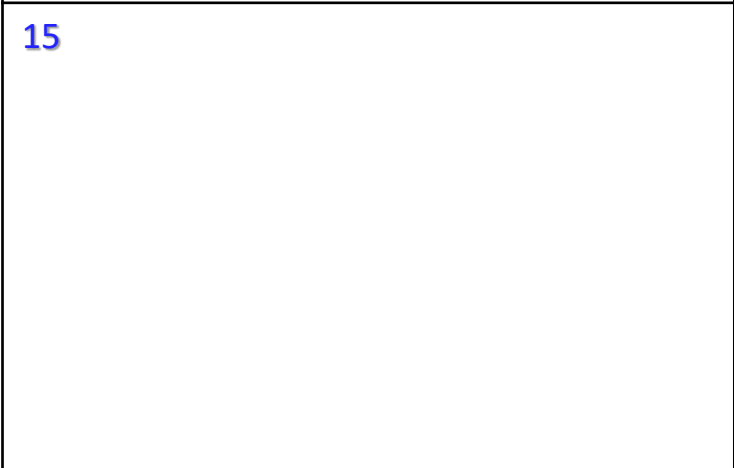
13



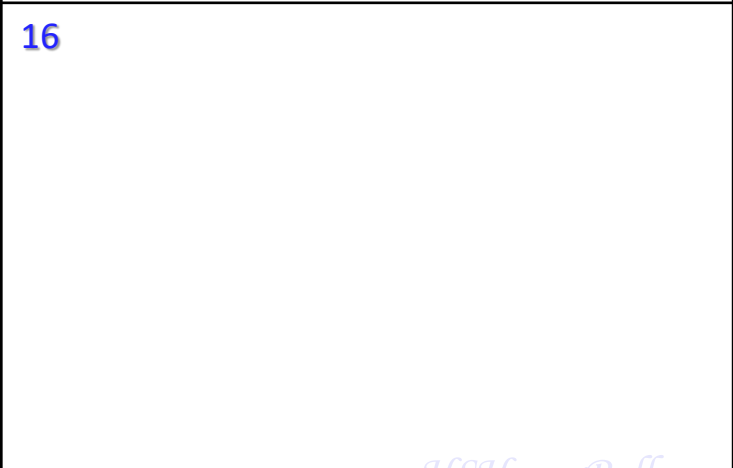
14



15



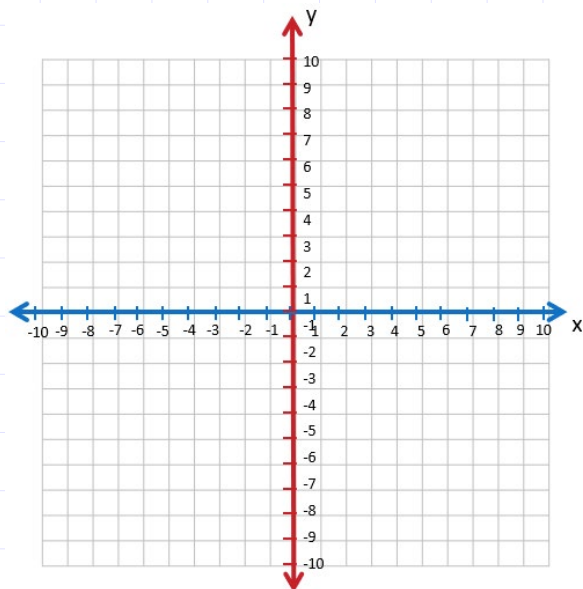
16



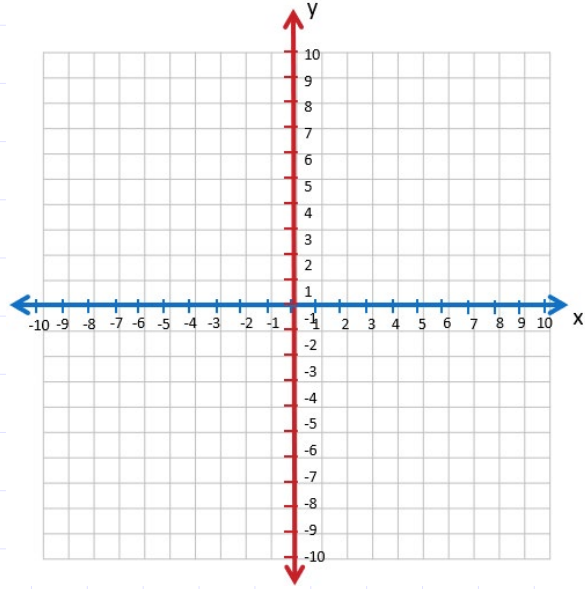
17

18

19



20



Success Check # _____

Name:

Date:

Warmup:

1. A cake recipe uses two eggs. You have a dozen eggs. How many cakes can you make?

2. You have one-half dollar. How many quarters are in the half dollar?

3. What is one-half times four?

4. Write the mixed number as an improper fraction

$$5\frac{2}{3} =$$

5. $\frac{3}{4} \times \frac{1}{5}$

6. $2\frac{1}{2} \times \frac{1}{4}$

I. Change Division to Multiplication

Notice Questions 2 and 3 from the Warmup:

How many quarters are in a half dollar?



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

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

_____ quarters are in a half-dollar.

To divide fractions:

1. Keep the first fraction

2. Change $\div$ to multiplication

3. Flip the second fraction (reciprocal)

$$\frac{1}{3} \div \frac{1}{2} =$$

$$\frac{1}{3} \cdot \frac{2}{1} =$$

TEST THE RULE!!

What is 10 divided by 2?

$$10 \div 2 =$$

$$\frac{6}{7} \div \frac{2}{3}$$

$$\frac{7}{8} \div \frac{5}{6}$$

8. $\frac{4}{5} \div \frac{6}{7}$

9. $\frac{3}{4} \div \frac{7}{8}$

$$7y^3(4y^5 + 2y^4)$$

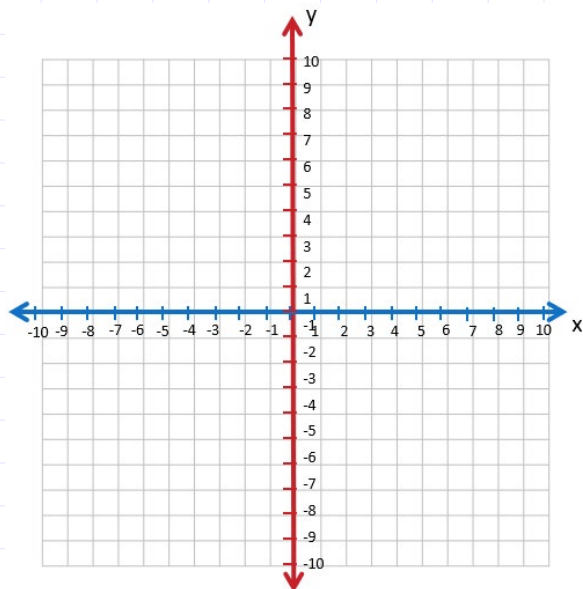
$$-3y(8y^2 + 7y^3)$$

8. $6c^5(4c^2 + 7c^7)$

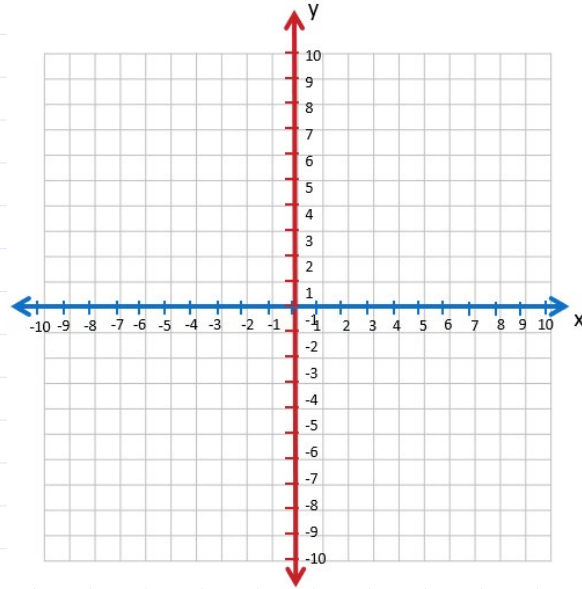
9. $5r(10r^2 + 3r^7)$

IV. Practice

10



11



12

13

14

15

16

17

18

19

20

21

22

23

Success Check # _____

Name:

Date:

Name: _____

Attempt #: _____

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Name:

Attempt #:

Test # ____ Answer Sheet

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20