Name: _____

# Summer Assignment for Students Entering
# Algebra 1 Part 1

**Directions:**

- **Complete this assignment WITHOUT the use of a calculator.**
- **All work must be shown to receive credit.**
- **Circle your answers**
- **Complete this assignment before the first day of class and be ready to hand it in, fully complete, on the first day of class.**

**Note to the Student:**

**The purpose of this assignment is to review topics that are essential to your success. It will be assumed that all of the topics covered in this assignment, and in your previous math courses, have been mastered and will not need explanation as we use them in the Algebra 1 Part 1 course.**

**Please make sure that you complete this assignment no earlier than a month before school starts. You want to make sure to give yourself time to identify and relearn concepts you have difficulty with but you don't want to do it too early in the summer that you forget the material.**

**This assignment will have some weight in your first quarter grade, to be determined by the teacher of your class.**

**We hope you have a great summer and look forward to seeing you in the fall!**

**The Birch Math Department**

**Please read and sign the Honor Code statement below before starting the exam.**

*I pledge on my honor to uphold the values of the Birch Wathen Lenox School and always act with integrity, loyalty and civility.  I will be honest in my academic work and in my relationships with peers and teachers.  I will remain loyal to those things I know, and am taught are right and just.  I will be kind, respectful, and charitable to all members of my school community, striving to be a role model for others.*

***Signature:*** _____

*Write in words the following powers*

$83^4$ _____

*Write the following in expanded form and then __evaluate__. Please show work as shown in class.*

$2^6$ _____

*Evaluate. Please show your work as demonstrated in class.*

$40 - (5 + 10) \div 3$                     $55 + (100 - 10) \div 30$

*Find the mean, median, mode, and range for the data below. Label each properly.*

26, 22, 10, 12, 16, 28

Mean: _____     Median: _____     Mode: _____     Range:_____

*Rewrite the numbers from least to greatest.*

1.10,                    1.01,                    0.11,                    1.11

*Find the sum or difference.*
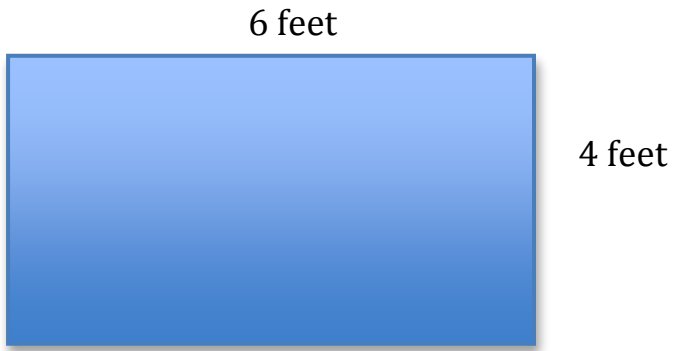
219.67 – 3.098                                            38.42 + 713.581

*Find the product or quotient.* (Round the quotient to the nearest hundredth if necessary)
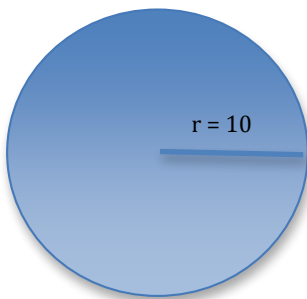
6.214 X 7.8                                            8.57 ÷ 6.4

*Find the perimeter and area.* (Use formulas)

6 feet

4 feet

Area: _____        Perimeter: _____

r = 10

Area: _____        Circumference: _____

*Write the prime factorization of 120, 96 and 1000.*

Answer (120): _____

Answer (96): _____

Answer (1000): _____

*Find the greatest common factor (GCF) of 40 and 24,  120 and 96,  36 and 12*

Answer (40 and 24): _____

Answer (120 and 96): _____

Answer (36 and 12): _____

*Find the least common multiple (LCM) of the following numbers.*

54, 18                36, 42                76, 84

Answer (54, 18): _____

Answer (36, 42): _____

Answer (76, 84): _____

Three seventh graders measured their heights using a meter stick.  Their heights were 1.2 meters, 1.5 meters, and 1.55 meters.  Write the heights as mixed numbers in **<u>simplest form</u>**.

## Lots of fractions practice (because you need it!)

*Adding and subtracting fractions and mixed numbers. Use the LCD.* **Show ALL work.** *Make sure your answers are in* **simplest form.**

1) $\dfrac{5}{4} - \dfrac{3}{4}$

2) $\dfrac{3}{2} - \dfrac{1}{2}$

3) $\dfrac{2}{5} + \dfrac{4}{5}$

4) $\dfrac{1}{3} - \dfrac{1}{3}$

5) $6 - \dfrac{1}{6}$

6) $\dfrac{1}{2} - \dfrac{1}{2}$

7) $\dfrac{1}{5} + \dfrac{1}{5}$

8) $\dfrac{7}{6} - \dfrac{5}{6}$

9) $\left(-\dfrac{4}{5}\right) - \dfrac{7}{8}$

10) $\dfrac{1}{3} - \left(-\dfrac{5}{3}\right)$

11) $\left(-\dfrac{1}{3}\right) + \dfrac{3}{8}$

12) $\left(-\dfrac{10}{7}\right) + \dfrac{1}{6}$

13) $\dfrac{9}{5} + \left(-\dfrac{4}{3}\right)$

14) $2 - \dfrac{13}{8}$

15) $\dfrac{9}{5} - \dfrac{5}{8}$

16) $\left(-\dfrac{4}{3}\right) - \left(-\dfrac{3}{2}\right)$

17) $(-1) + \left(-2\dfrac{2}{5}\right)$

18) $\left(-3\dfrac{3}{5}\right) - 4\dfrac{2}{5}$

19) $3\dfrac{6}{7} + \left(-1\dfrac{1}{7}\right)$

20) $1\dfrac{2}{7} + \left(-3\dfrac{4}{7}\right)$

21) $2\dfrac{1}{3} + \left(-1\dfrac{2}{3}\right)$

22) $\left(-1\dfrac{3}{4}\right) + \left(-3\dfrac{3}{4}\right)$

During the airing of a sporting event on television, the actual event was on for 5/6 hour and commercials were on for ½ hour. **How much more time** was spent showing the event than commercials?

Multiplying & Dividing Fractions, Whole Numbers & Mixed Numbers

1) $-\dfrac{5}{4} \cdot \dfrac{1}{3}$

2) $\dfrac{8}{7} \cdot \dfrac{7}{10}$

3) $\dfrac{4}{9} \cdot \dfrac{7}{4}$

4) $-\dfrac{2}{3} \cdot \dfrac{5}{4}$

5) $-2 \cdot \dfrac{3}{7}$

6) $-2\dfrac{2}{3} \cdot 4\dfrac{1}{10}$

7) $-2\frac{1}{5} \cdot -1\frac{3}{4}$

8) $-1\frac{1}{4} \cdot 9$

9) $-1\frac{5}{7} \cdot -2\frac{1}{2}$

10) $-2\frac{3}{8} \cdot 2\frac{1}{2}$

11) $\frac{-1}{5} \div \frac{7}{4}$

12) $\frac{-1}{2} \div \frac{5}{4}$

13) $\frac{-3}{2} \div \frac{-10}{7}$

14) $\frac{1}{2} \div \frac{8}{7}$

15) $\frac{-9}{5} \div 2$

16) $-3\frac{5}{9} \div 3$

17) $-2 \div -3\dfrac{4}{5}$

18) $\dfrac{1}{9} \div -1\dfrac{1}{3}$

19) $1\dfrac{6}{7} \div 5\dfrac{3}{4}$

20) $-3\dfrac{7}{10} \div 2\dfrac{1}{4}$

Mr. Russel's bookshelf is 14 inches long. Each of his DVD cases is 1/6 inch wide. How many DVD cases can she fit on the shelf?

Find the absolute value of the number.

-210                    8                    0

Find the sum, difference, product and quotient.

15 – (-32)          -4(6)(-3)          25 + (-13)          78 ÷ (-3)

At the beginning of the week, you have $47 in your savings account. During the week, you deposit $19, withdraw $55, deposit $23. How much money is in your account at the end of the week?

The record low temperature in Texas is -23°F. The record low temperature in Utah is three times lower than the record low in Texas. What is the record low temperature in Utah?

**Plot each set of ordered pairs. Join the points and find the length of the line segment.**

(-1, -4) , (1, -4), (3, 5), (-2, 6)
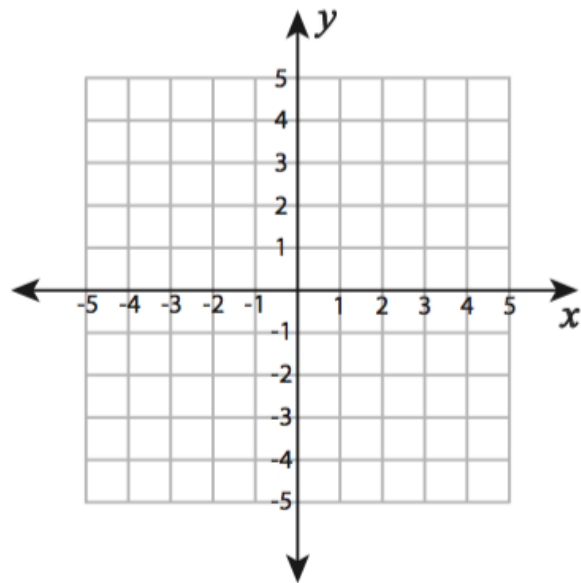
**Solve the following single and multi-step equations**

1) $26 = 8 + v$

2) $3 + p = 8$

3) $15 + b = 23$

4) $-15 + n = -9$

5) $m + 4 = -12$

6) $x - 7 = 13$

7) $m - 9 = -13$

8) $p - 6 = -5$

9) $-8 = -(x + 4)$

10) $12 = -4(-6x - 3)$

11) $14 = -(p - 8)$

12) $-(7 - 4x) = 9$
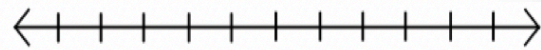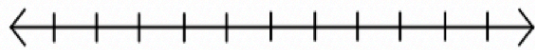
13) $-18 - 6k = 6(1 + 3k)$

14) $5n + 34 = -2(1 - 7n)$

15) $2(4x - 3) - 8 = 4 + 2x$

16) $3n - 5 = -8(6 + 5n)$
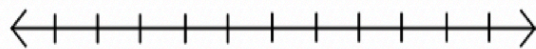
**Solve each inequality and graph each solution.**
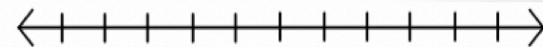
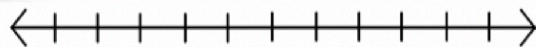**3.** $3(n - 4) \geq 6$

**4.** $-2(x + 1) < 2$




**5.** $5n - 21 < 8n$

**6.** $-3z + 15 > 2z$
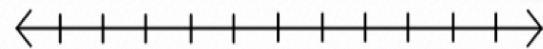



**7.** $x + 3 \geq 2x - 4$

**8.** $4y - 3 < -y + 12$

**Write an equation to show the relationship between the input and the output.**

| In (J) | 22 | 72 | 11 | 71 |
|--------|-----|-----|-----|-----|
| Out (m) | 29 | 79 | 18 | 78 |

Function: _____

**Graph the following equation by making a table of values (**Make sure to label the graph.)

$y = -x - 3$
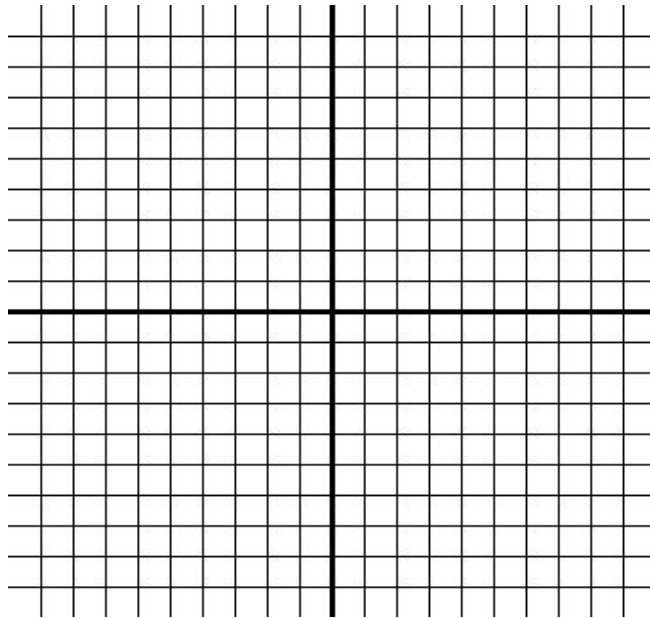
**The table below shows the different number of colored shirts in Mr. Russell's class. Use the table to write the specified ratio.**

Blue to Yellow

| Shirt Color | Quantity |
|-------------|----------|
| Blue | 5 |
| Red | 3 |
| Yellow | 2 |
| Green | 4 |
| Pink | 2 |

Green to total number of shirts

Red and yellow to green and blue

**Find the unit rate:**

$390 in 40 hours
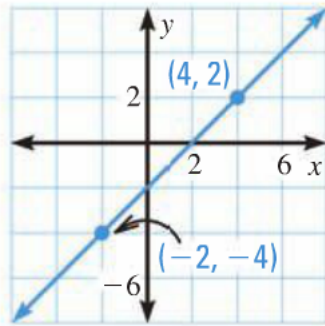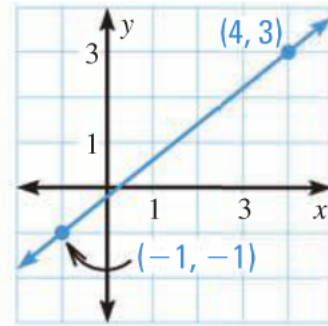
66 yards in 10 seconds

**Find the average speed.**

A swimmer completed a 100-meter race in 1 minute and 20 seconds. What was the swimmer's average speed?
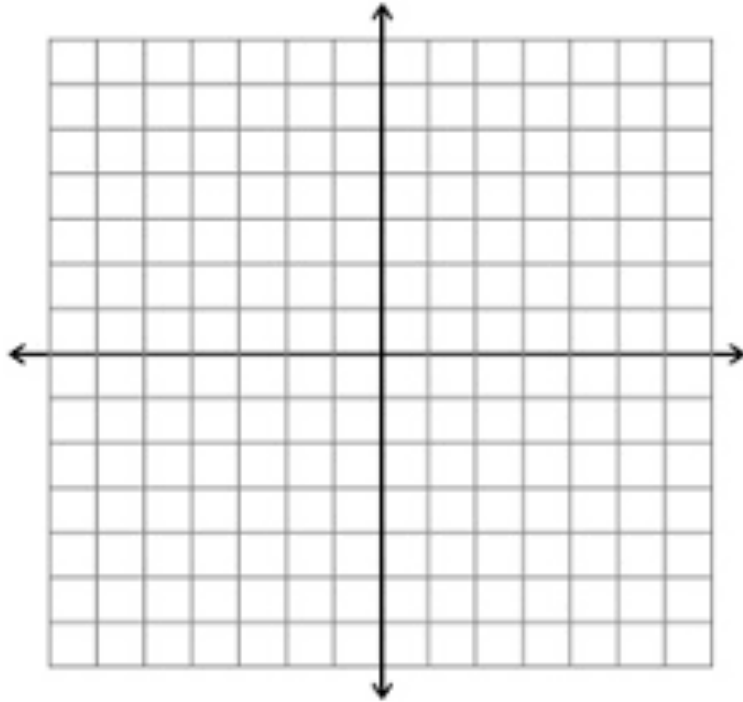
**Find the slope of the line.**



(4, 2)

(−2, −4)

Slope:



(4, 3)

(−1, −1)
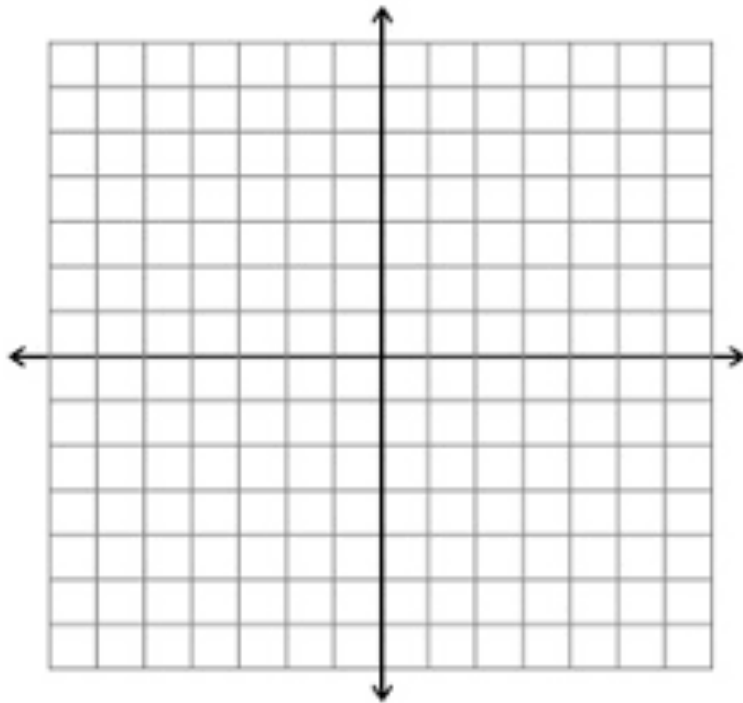
Slope:

**Draw the graph of the line that passes through the points. Then find the slope of the line.** (Remember to label the graph)

(-3, 1) , (-2, 2)

(4, 0) , (-7, 1)

**Use equivalent ratios to solve the proportion.**

$$\frac{32}{36} = \frac{p}{9}$$

**Use algebra to solve the proportion.**

$$\frac{16}{64} = \frac{s}{4}$$

**Use cross products to solve the proportion.**

$$\frac{36}{t} = \frac{3}{5}$$

**Write the decimal as a percent.**

0.45                     0.8                     1.24                     0.834

**Write the fraction as a percent.**

$\frac{1}{2}$                     $\frac{5}{8}$                     $\frac{25}{40}$                     $\frac{6}{20}$

Deserts cover about 1/5 of Earth's land surface.  What percent of Earth's land surface is **not** desert?

**Finding a part of the base or the base.**

What number is 76% of 25?                    14 is 56% of what number?

9 is 45% of what number?                    What number is 12% of 50?

**Use the percent equation:**

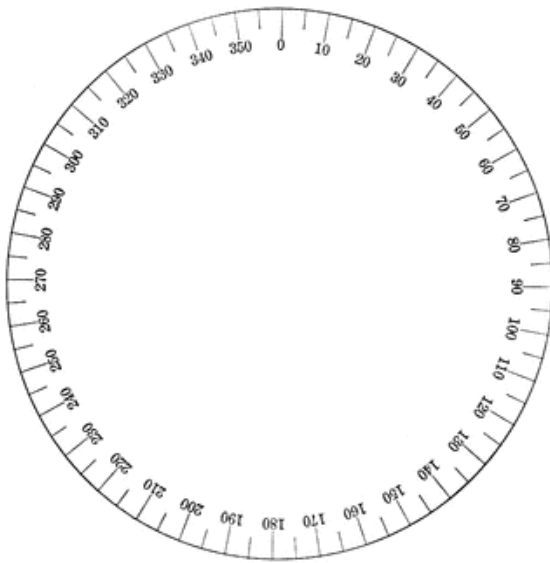What number is 40% of 150?        The number 117 is 45% of what number?

What percent of 150 is 90?

A clothing salesperson sells a suit for $350. The salesperson receives an 8% commission on the sale. How much is the commission?

**Customary Units:**
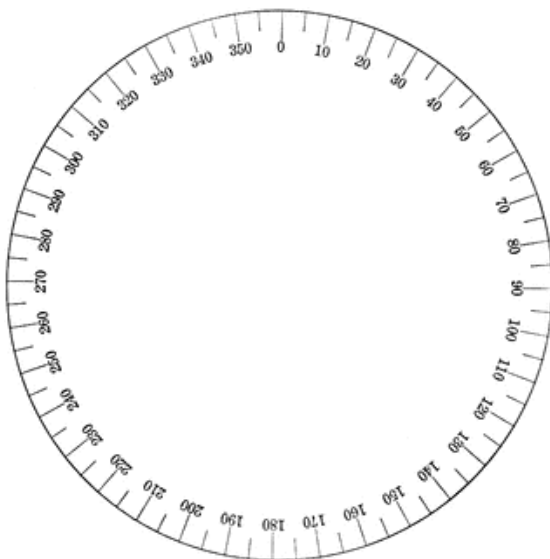
23ft = _____ inches      6 qts = _____ pints      28 qts = _____ gal

**Display the data in a circle graph.**



| Favorite Shirt | Students |
|---|---|
| T-shirt | 25% |
| Sweater | 35% |
| Button-down | 30% |
| Sweatshirt | 10% |

**Display the data in the circle graph.**



| Favorite Juice | People |
|---|---|
| Apple | 6 |
| Grape | 14 |
| Orange | 18 |
| Pineapple | 2 |