

Name: _____ Date: _____ Period: _____

Algebra 1

Summer work 2019

Show all work (when appropriate) on a separate sheet of paper. Simplification is implied for all problems. Leave answers in fractional form when appropriate (improper fractions are preferred to mixed numbers). Problems are to be returned on the first Friday of classes (which is NOT the first day of school). A test reviewing the prerequisite skills (reviewed in this packet) will be conducted the following week of classes. Please send questions to kbowen@tcprep.org

NO CALCULATORS ALLOWED

Determine if $>$, $<$, or $=$

1) -1.9 2.5

1) _____

2) $\frac{22}{23}$ $|\frac{22}{23}|$

2) _____

3) $|-2|$ $|2|$

3) _____

List the given numbers in order from least to greatest.

4) $\sqrt{10}$, -4 , 4 , $-\sqrt{5}$, $\frac{21}{20}$

4) _____

5) $\frac{3}{4}$, $-\frac{6}{5}$, $-\frac{5}{5}$, $\sqrt{3}$, -2

5) _____

6) $\frac{3}{4}$, $-\frac{6}{5}$, $-\frac{5}{5}$, $\sqrt{2}$, -4

6) _____

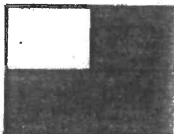
Identify the fraction represented by the shaded region.

7)



7) _____

8)



8) _____

9)



9) _____

VOCABULARY

You should be familiar with all of the following terms:

Order of Operations	Improper Fraction
Simplest Form	Solving an Equation
Variable Terms	Evaluate an Expression
Integers	Equation
Whole Numbers	Inequality
Sum	Percent
Difference	Area
Quotient	Perimeter
Product	Coordinate System
Factors	x-axis
Greatest Common Factor	y-axis
Least Common Denominator	Ordered Pair
Least Common Multiple	Origin
Mixed Number	

In all math classes, you are expected to show your work at all times. The following are examples of acceptable work and unacceptable work.

Acceptable Work ☺	Unacceptable Work ☹
1) $-2(3-6)+4$ $-2(-3)+4$ $6+4$ 10	1) $-2(3-6)+4$ 10
2) $6+4(-5+1)^2$ $6+4(-4)^2$ $6+4(16)$ $6+64$ 70	2) $6+4(-5^4+1)^2$ 16 4 64 70
3) $\frac{1}{2} + \frac{2}{5}$ $\frac{10}{20} + \frac{8}{20}$ $\frac{18}{20} = \frac{9}{10}$	3) $\frac{1}{2} \frac{10}{20} + \frac{2}{5} \frac{8}{20} = \frac{18}{20} = \frac{9}{10}$
4) $2\frac{1}{3} \cdot 7\frac{1}{2}$ $\frac{7}{3} \cdot \frac{15}{2} = \frac{35}{2}$	4) $2\frac{1}{3} \cdot 7\frac{1}{2}$ $\frac{7}{3} \cdot \frac{15}{2} = \frac{105}{6} = \frac{35}{2}$
5) $\frac{3}{4} + \frac{9}{8}$ $\frac{1}{4} \cdot \frac{8}{8} = \frac{2}{3}$	5) $\frac{3}{4} + \frac{9}{8} = \frac{8}{8} + \frac{24}{8} = \frac{32}{8}$

All problems should be completed without a calculator.

Section 1 – Use =, or >, or < to compare.

1). 0 _____ -3

2). -4 _____ -5

3). $\frac{10}{5}$ _____ 2

4). $-\frac{1}{3}$ _____ $-0.\bar{3}$

5). -11.99 _____ -11.98

6). $12\frac{1}{2}$ _____ 12.5

Section 2 – Write in order from least to greatest.

1). $-2, 2.25, -2.75$

2). $-4, 0, -1$

3). $\sqrt{36}, \sqrt{25}, \sqrt{49}$

4). $\frac{4}{9}, \frac{5}{9}, \frac{1}{9}$

5). $\frac{1}{3}, \frac{1}{6}, \frac{1}{9}$

Section 3 – Write these fractions in simplest form.

1). $\frac{4}{12}$

2). $\frac{3}{27}$

3). $\frac{6}{24}$

4). $\frac{11}{55}$

5). $\frac{8}{20}$

6). $\frac{7}{14}$

7). $\frac{90}{100}$

Section 4 – Write each fraction as a mixed number.

1). $\frac{17}{5}$

2). $\frac{35}{6}$

3). $\frac{19}{12}$

Section 5 – Write each fraction as an improper fraction.

1). $2\frac{1}{3}$

2). $5\frac{1}{4}$

3). $6\frac{2}{3}$

Section 6 – Add or subtract. Write each answer in simplest form.

1). $\frac{1}{7} + \frac{3}{7}$

2). $\frac{2}{3} + \frac{1}{3}$

3). $\frac{9}{5} - \frac{6}{5}$

4). $\frac{9}{10} - \frac{3}{10}$

5). $\frac{3}{4} + \frac{2}{3}$

6). $\frac{5}{8} - \frac{1}{4}$

7). $\frac{1}{3} - \frac{1}{2}$

8). $-\frac{4}{5} - \frac{7}{12}$

9). $-\frac{3}{10} + \frac{1}{7}$

Section 7 – Find each sum or difference.

1). $-3 - 6$

2). $8 - 2$

3). $-10 + 9$

4). $-4 - 20$

5). $-90 - 10$

6). $57 - 60$

7). $-98 + 56$

8). $-25 - 10$

9). $-8 - (-10)$

10). $4 - (-20)$

11). $-12 - (-8)$

12). $-18 - (-8)$

13). $-11 - 13 - 1(-12)$

14). $35 - 15 - 16$

15). $-18 - (-45) + 46$

Continue with Section 7 Find each product or quotient:

16). $-3 \cdot -4$

17). $-16 \cdot 2$

18). $20 \cdot -2$

19). $-6 \cdot -9$

20). $(-9)(-3)$

21). $(-11)(6)$

22). $(9)(-15)$

23). $(2)(-3)(5)$

24). $12 \div -2$

25). $-15 \div -5$

26). $-36 \div 6$

27). $75 \div 3$

28). $\frac{16}{-2}$

29). $\frac{-81}{9}$

30). $\frac{-18}{-3}$

31). $\frac{75}{3}$

Section 8 - Multiply or Divide. Write answer in simplest form.

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

2). $\frac{1}{2} \cdot \frac{1}{2}$

3). $\frac{7}{8} \cdot \frac{1}{5}$

4). $3\frac{1}{5} \cdot 1\frac{7}{8}$

5). $\frac{3}{5} \div \frac{1}{2}$

6). $\frac{4}{5} \div \frac{9}{10}$

7). $7\frac{2}{3} \div \frac{2}{9}$

8). $\frac{10}{9} \div \frac{2}{27}$

Section 9 - Simplify each expression.

1). $30 \div 2(3)$

2). $4 + 6(7)$

3). $4 \cdot 3^2 + 2$

4). $(2+4) \div (2+1)$

5). $2 \div 9 - 4 + 3$

6). $8 \div 2 \cdot 4$

7). $8(4-2)$

8). $4 + 8 \div 2 + 6 \cdot 3$

9). $4 - (6 + 3)$

10). $\frac{3(6+2)}{3+1}$

11). $7 + 3(-2+4)^2$

Section 10 – Write each number as percent.

1). .25

2). $\frac{4}{5}$

3). $\frac{1}{2}$

4). $\frac{2}{3}$

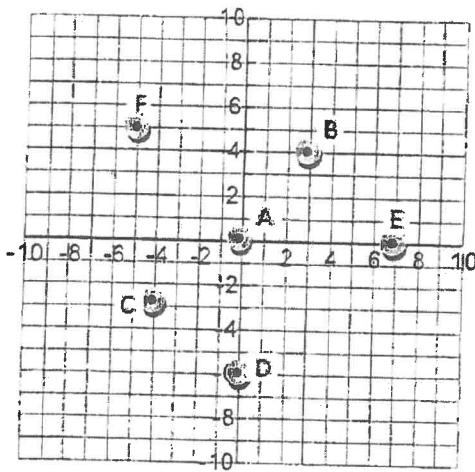
5). .478

6). $\frac{3}{4}$

7). 0.08

8). $\frac{17}{100}$

Section 11 – Please give the coordinates of the labeled coordinates.



A = (,)

B = (,)

C = (,)

D = (,)

E = (,)

F = (,)

Section 12 – Please plot the following points on the graph provided.

A = (1 , 1)

B = (-2 , 4)

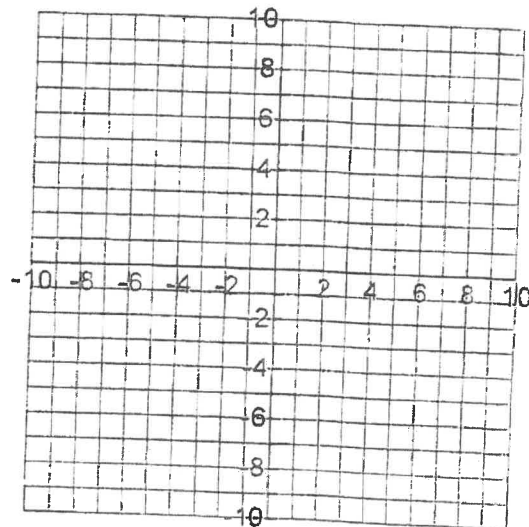
C = (-3 , -3)

D = (0 , 6)

E = (-4 , 0)

F = (8 , 8)

G = (6 , -5)



Section 13 – Evaluate each expression for $a = -2$ and $b = -3$

- | | | |
|-----------------|-------------------|-------------|
| 1). $a - b$ | 2). $a \cdot b$ | 3). $a(b)$ |
| 4). $b \cdot a$ | 5). ab | 6). $b - a$ |
| 7). $a \div b$ | 8). $\frac{a}{b}$ | |

Indicate whether the equation illustrates the multiplicative property of 0, the multiplicative identity, the commutative property of multiplication, the associative property of multiplication, or the distributive property.

53) $\left(-\frac{1}{6}\right) \cdot 1 = -\frac{1}{6}$

- | | |
|---|----------------------------|
| A) Commutative property of multiplication | B) Distributive property |
| C) Multiplicative inverse | D) Multiplicative identity |

53) _____

54) $\left(\frac{1}{9}\right) \cdot 0 = 0$

- | | |
|---|---------------------------------|
| A) Multiplicative identity | B) Multiplicative property of 0 |
| C) Commutative property of multiplication | D) Distributive property |

54) _____

55) $(6 \cdot 6) \cdot 2 = 6 \cdot (6 \cdot 2)$

- | | |
|----------------------------|---|
| A) Multiplicative identity | B) Associative property of multiplication |
| C) Distributive property | D) Commutative property of multiplication |

55) _____

56) $8(2 + 4) = 8 \cdot 2 + 8 \cdot 4$

- | | |
|----------------------------|---|
| A) Multiplicative identity | B) Commutative property of multiplication |
| C) Distributive property | D) Associative property of multiplication |

56) _____

57) $(7 \cdot 3)(4 \cdot 5) = (4 \cdot 5)(7 \cdot 3)$

- | | |
|---|---|
| A) Commutative property of multiplication | B) Associative property of multiplication |
| C) Multiplicative identity | D) Distributive property |

57) _____

58) $-(1 + 6) = -1 - 6$

- | | |
|----------------------------|---|
| A) Multiplicative identity | B) Commutative property of multiplication |
| C) Distributive property | D) Associative property of multiplication |

58) _____

Fraction Practice

Please use your resources to correctly simplify each fraction problem below. It is important to come into algebra class in the Fall with your fraction skills in place. Remember...you will be assessed on your fraction skills, as well as the other packet skills, the first full week of school. Look it up online if you are having problems remembering how to complete the problem.

Show your work!

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

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

$$3) \frac{-5}{8} + \frac{2}{15}$$

$$4) \frac{5}{6} \div \frac{2}{9}$$

$$5) 5\frac{1}{2} + 2\frac{3}{10}$$

$$6) 3\frac{2}{7} - 5\frac{5}{7}$$

$$7) (-3\frac{1}{3}) (-1\frac{7}{8})$$

$$8) 15 \div (-1 \frac{1}{2})$$

$$9) -3 \frac{7}{12} - 2 \frac{2}{3}$$

$$10) -7 \frac{4}{5} + 4 \frac{1}{2}$$

$$11) \left(\frac{-3}{8} \right)^2$$

$$12) \frac{5x}{8} + \frac{x}{3}$$

$$13) \left(\frac{-2}{5} \right)^3$$

Fractions, Decimals, and Percents

Write each as a decimal. Round to the thousandths place.

1) 90%

2) 30%

3) 115.9%

4) 9%

5) 7%

6) 65%

7) 0.3%

8) 445%

Write each as a percent. Round to the nearest tenth of a percent.

9) 0.452

10) 0.006

11) 0.002

12) 0.05

13) 4.78

14) 0.1

15) 3.63

16) 0.03

Write each as a fraction.

17) 25%

18) 70%

19) 93%

20) 58%

21) 50%

22) $66.\overline{6}\%$

23) 20%

24) 80%

25) 71%

26) 30%

Write each as a percent. Use repeating decimals when necessary.

27) $\frac{1}{2}$

28) $\frac{1}{8}$

29) $\frac{2}{3}$

30) $\frac{1}{100}$

31) $2\frac{1}{10}$

32) $\frac{3}{8}$

33) $\frac{1}{10}$

34) $\frac{87}{100}$

Equivalent Fractions (B)

Instructions: Find the missing numbers in the equivalent fractions below.

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

$$\frac{\boxed{}}{8} = \frac{8}{16}$$

$$\frac{4}{\boxed{}} = \frac{16}{44}$$

$$\frac{3}{\boxed{}} = \frac{9}{21}$$

$$\frac{1}{\boxed{}} = \frac{3}{6}$$

$$\frac{\boxed{}}{3} = \frac{5}{15}$$

$$\frac{7}{12} = \frac{35}{\boxed{}}$$

$$\frac{2}{\boxed{}} = \frac{10}{50}$$

$$\frac{3}{\boxed{}} = \frac{15}{45}$$

$$\frac{6}{\boxed{}} = \frac{12}{18}$$

$$\frac{3}{12} = \frac{\boxed{}}{48}$$

$$\frac{4}{6} = \frac{20}{\boxed{}}$$

$$\frac{5}{8} = \frac{\boxed{}}{24}$$

$$\frac{1}{10} = \frac{4}{\boxed{}}$$

$$\frac{3}{7} = \frac{12}{\boxed{}}$$

$$\frac{2}{4} = \frac{8}{\boxed{}}$$

$$\frac{5}{\boxed{}} = \frac{15}{33}$$

$$\frac{4}{\boxed{}} = \frac{16}{20}$$

$$\frac{4}{\boxed{}} = \frac{20}{35}$$

$$\frac{4}{\boxed{}} = \frac{12}{18}$$

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

$$\frac{\boxed{}}{5} = \frac{4}{10}$$

$$\frac{3}{\boxed{}} = \frac{12}{20}$$

$$\frac{\boxed{}}{3} = \frac{6}{9}$$