

Timothy Christian School

Entering Intro to Algebra Summer Work

Name: _____

Adding & Subtracting Fractions & Mixed Numbers

Solve each equation.

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

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

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

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

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

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

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

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

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

$$10) \left(-\frac{1}{3}\right) + \frac{3}{8}$$

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$$11) \left(-\frac{10}{7}\right) + \frac{1}{6}$$

$$16) 3\frac{6}{7} + \left(-1\frac{1}{7}\right)$$

$$12) \frac{9}{5} + \left(-\frac{4}{3}\right)$$

$$17) \left(-1\frac{3}{4}\right) + \left(-3\frac{3}{4}\right)$$

$$13) 2 - \frac{13}{8}$$

$$18) 1\frac{2}{7} + \left(-3\frac{4}{7}\right)$$

$$14) \left(-\frac{4}{3}\right) - \left(-\frac{3}{2}\right)$$

$$19) \left(-2\frac{5}{6}\right) - \left(-1\frac{1}{4}\right)$$

$$15) (-1) + \left(-2\frac{2}{5}\right)$$

$$20) \left(-3\frac{5}{8}\right) - 4\frac{2}{5}$$

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Multiply & Divide Fractions & Mixed Numbers

Solve each equation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Adding/Subtracting Positive/Negative Numbers

Solve each equation.

1) $(-2) + 3$

9) $38 - (-17)$

2) $(-14) + (-7)$

10) $(-44) = (-9)$

3) $3 - (-8)$

11) $(-16) - (-36)$

4) $(-9) + 14$

12) $(-6) - 24$

5) $5 + (-8)$

13) $(-16) - 6 + (-5)$

6) $(-27) - 24$

14) $15 - 13 + 2$

7) $(-41) + (-40)$

15) $16 - (-13) - (-5)$

8) $(-8) - (-2)$

16) $(-7) - (-2) - 9$

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Multiplying/Dividing Positive/Negative Numbers

Solve each equation.

1) $\frac{10}{5}$

10) $-\frac{72}{-4}$

2) $-\frac{24}{12}$

11) $153 \div 17$

3) $-\frac{20}{-2}$

12) $12 \div -3$

4) $-\frac{300}{-20}$

13) $48 \div 6$

5) $\frac{65}{5}$

14) $-120 \div -20$

6) $-\frac{66}{-6}$

15) $306 \div 18$

7) $\frac{75}{-15}$

16) $65 \div 13$

8) $-\frac{56}{-14}$

17) $-85 \div -17$

9) $\frac{102}{-17}$

18) $128 \div -16$

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19) $-180 \div 15$

28) -9×-3

20) $234 \div -13$

29) 12×-12

21) -11×9

30) 11×-6

22) -7×-12

31) $6 \times -5 \times 3$

23) -8×-11

32) $6 \times -1 \times 2$

24) -6×4

33) $8 \times -6 \times -3$

25) -3×-11

34) $-3 \times 6 \times -6$

26) -5×-9

35) $(3)(3)(-1)(3)$

27) 9×-7

36) $(-3)(3)(-3)(-3)$

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Order of Operations

Evaluate each expression.

1) $3(6 + 7)$

8) $48 \div (4 + 4)$

2) $5 \times 3 \times 2$

9) $20 \div (4 - (10 - 8))$

3) $72 \div 9 + 7$

10) $40 \div 4 - (5 - 3)$

4) $2 + 7 \times 5$

11) $9 + 9 + 6 - 5$

5) $9 + 8 - 7$

12) $(5 + 16) \div 7 - 2$

6) $9 - 32 \div 4$

13) $7 + 10 \times 5 + 10$

7) $5(10 - 1)$

14) $(6 + 25 - 7) \div 6$

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Least Common Multiple - Find the least common multiple of the three numbers.

1) 9 and 12

6) 4, 8, 64

2) 4, 7, 14

7) 6, 10, 12

3) 5, 12, 15

8) 3, 6, 9, 12

4) 8, 14, 16

9) 4, 6, 8, 10

5) 6, 8, 16

10) 2, 6, 8, 12

Greatest Common Factor - Find the greatest common factor of the three numbers.

1) 27 and 72

6) 18, 36, 54

2) 48 and 64

7) 27, 36, 45

3) 16, 28, 48

8) 21, 49, 63

4) 15, 35, 95

9) 25, 35, 45

5) 20, 30, 80

10) 28, 42, 63

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Adding/Subtracting Decimals

Find each sum or difference. Do not use a calculator.

1) $5.4 + (-9.7)$

8) $(-7.1) + 3.63$

2) $10.8 + (-4.73)$

9) $13.7 + 3.2$

3) $(-0.5) + 0.3$

10) $(-10.9) + 6.1$

4) $(-4.79 + (-0.4))$

11) $2.2 - 7.3$

5) $3.305 + 1.7$

12) $(-8.1) - (-8.9)$

6) $(-3.6) + 0.43$

13) $2.9 - 9.4$

7) $(-4.3) + 14.5$

14) $(-3.9) - 8.9$

Multiplying/Dividing Decimals

Find each product or quotient. Do not use a calculator.

1) -5.5×-4.87

3) 0.2×-1.6

2) 1.7×-2.1

4) 1.7×-3.1

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5) -4.6×-7.2

14) $4.57 \div 3$

6) -5.928×-11.6

15) $6.45 \div 5$

7) -1.5×-7.1

16) $315.2 \div 0.2$

8) 7.8×5.1

17) $425.4 \div 0.5$

9) $-7.5 \times 9 \times -8.3$

18) $6 \div 1.25$

10) $-4.04 \times -9 \times 3$

19) $80 \div 1.5$

11) $3.2 \times 8.7 \times -1.1$

20) $46.483 \div 0.2$

12) $8.1 \times 8.6 \times -5.2$

21) $56.24 \div 0.02$

13) $6.23 \div 2$

22) $100.4 \div 0.25$

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Evaluating Expressions

Evaluate each expression using the given values.

1) $6h - j$; use $h = 3, j = 3$

2) $a + 6 + b$; use $a = 1, \text{ and } b = 6$

3) $b^2 - a$; use $a = 6, \text{ and } b = 5$

4) $x(y + y)$; use $x = 4, \text{ and } y = 3$

5) $m + 2p$; use $m = 3, \text{ and } p = 5$

6) $6m + n$; use $m = 5 \text{ and } n = 1$

7) $y + x + x$; use $x = 3, \text{ and } y = 1$

8) $x + 6 + y$; use $x = 2, \text{ and } y = 4$

9) $m + p - m$; use $m = 2, \text{ and } p = 2$

10) $p^2 - q$; use $p = 5, \text{ and } q = 4$

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11) $y \div 2 + x$; use $x = 1$, and $y = 2$

12) $a - 5 - b$; use $a = 10$, and $b = 4$

13) $p^2 + m$; use $m = 1$, and $p = 5$

14) $y + 9 - x$; use $x = 1$, and $y = 3$

15) $m + p \div 5$; use $m = 1$, and $p = 5$

16) $y^2 - x$; use $x = 7$, and $y = 7$

17) $z(x + y)$; use $x = 6$, $y = 8$, and $z = 6$

18) $x + y + y$; use $x = 9$, and $y = 10$

19) $p^3 + 10 + m$; use $m = 9$, and $p = 3$

20) $6q + m - m$; use $m = 8$, and $q = 3$

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Evaluating Expressions

Evaluate each expression using the given values.

1) $26 = 8 + v$

12) $14b = -56$

2) $3 + p = 8$

13) $-6 = \frac{b}{18}$

3) $15 + b = 23$

14) $10n = 40$

4) $-15 + n = -9$

15) $\frac{v}{8} = 2$

5) $m + 4 = -12$

16) $16 = \frac{k}{11}$

6) $x - 7 = 13$

17) $-15x = 0$

7) $m - 9 = -13$

18) $-17x = -204$

8) $p - 6 = -5$

19) $21 = -7n$

9) $v - 15 = -27$

20) $\frac{m}{4} = -13$

10) $n + 16 = 19$

21) $-126 = 14k$

11) $-104 = 8x$

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$$22) -143 = -11x$$

$$27) \frac{v}{7} = 8$$

$$23) -16 + x = -15$$

$$28) a + 11 = 20$$

$$24) -5 = \frac{a}{18}$$

$$29) -7 + m = 8$$

$$25) -17 = x - 15$$

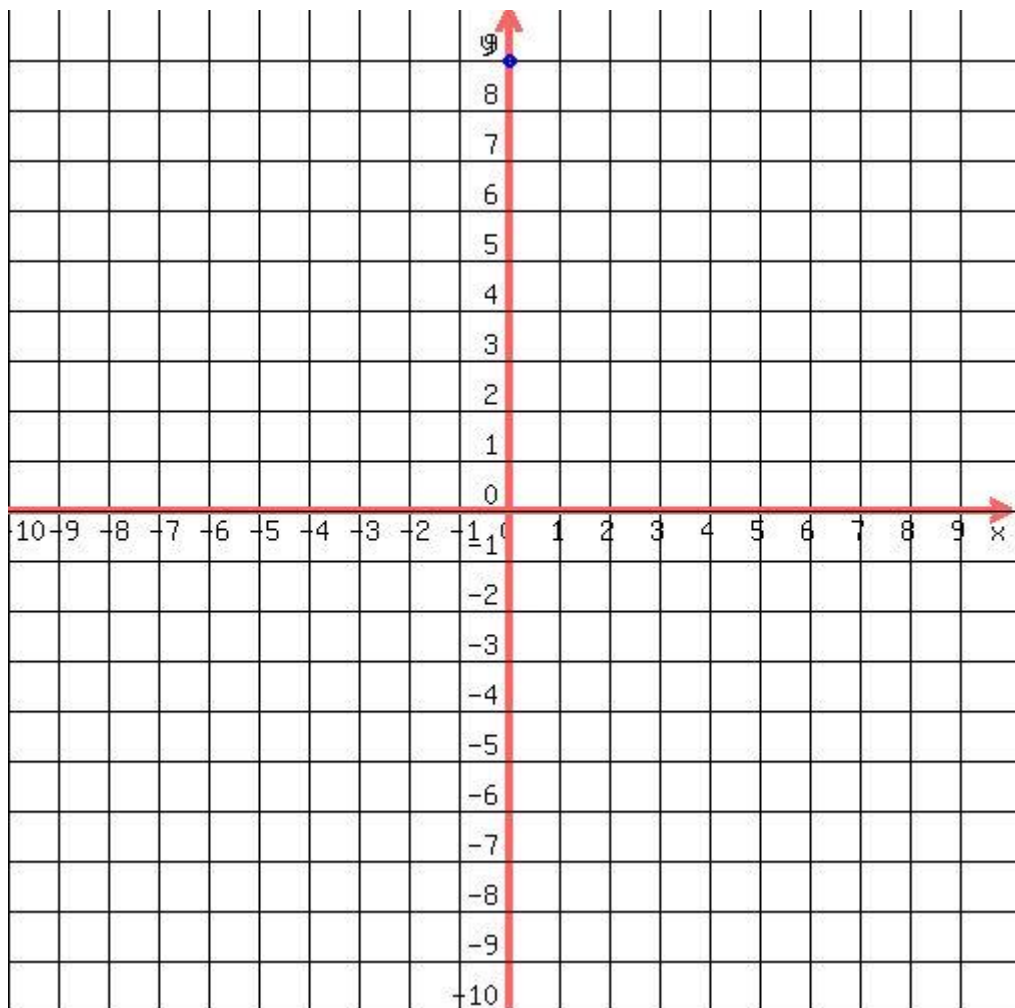
$$30) 18 + m = 8$$

$$26) n - 8 = -10$$

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Four Quadrant Graphic Puzzle



Connect each sequence of points with a line.

$(8,7)$, $(7,3)$, $(5,1)$, $(1,-3)$, $(-1,-5)$, $(-2.5,-4.5)$, $(-3.5,-3.5)$, $(-4,-2)$, $(-2,0)$, $(2,4)$, $(4,6)$, $(8,7)$ End of Sequence

$(-3.5,-3.5)$, $(-4,-4)$, $(-5,-4)$, $(-5,-5)$, $(-4,-6)$, $(-3,-6)$, $(-3,-5)$, $(-2.5,-4.5)$ End of Sequence

$(-5,-4)$, $(-8,-6)$, $(-6,-6)$, $(-8,-9)$, $(-5,-7)$, $(-5,-9)$, $(-3,-6)$ End of Sequence

$(4,6)$, $(5,4)$, $(7,3)$ End of Sequence

$(2,4)$, $(3,2)$, $(5,1)$ End of Sequence

$(0,2)$, $(1,0)$, $(3,-1)$ End of Sequence

$(-2,0)$, $(-1,-2)$, $(1,-3)$ End of Sequence

What is the shape? _____

Work in pencil first!

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Exponents

Evaluate.

1) $7 \cdot 7 \cdot 7 \cdot 7$

10) 10^{-3}

2) $5 \cdot 5 \cdot 5 \cdot b \cdot b \cdot b \cdot b$

11) 10^0

3) 10^2

12) 10^4

4) $(-5)^3$

13) $(-6)^{-2}$

5) 12^2

14) 2^{-5}

6) $(-9)^2$

15) 6^{-3}

7) 2^5

16) $15 + (-6)^0 - 3^{-2}$

8) $(-3)^4$

17) $6(8 - 2)^0 + 4^{-2}$

9) 6^3

18) $2^{-2} + (-4)^{-1}$

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Properties of Exponents - Write the answer as one power.

1) $10^5 \cdot 10^7$

6) $\frac{23^{17}}{23^9}$

2) $y^{12} \cdot y^{10}$

7) $\frac{(-a)^{12}}{(-a)^7}$

3) $(-11)^{20} \cdot (-11)^{10}$

8) $(2^4)^{-3}$

4) $\frac{x^{10}}{x^5}$

9) $(y^5)^2$

5) $\frac{16^{10}}{16^2}$

10) $(10^0)^3$

Scientific Notation Write each number in standard notation or in scientific notation.

1) 2.54×10^2

6) 75,000,000

2) 8.59×10^5

7) 208

3) 3.331×10^6

8) 0.093

4) 7.21×10^{-3}

9) 0.00852

5) 5.88×10^{-4}

10) 0.050