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Entering Intro to Algebra Summer Work

Name: _____

Adding & Subtracting Fractions & Mixed Numbers

Solve each equation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Multiply & Divide Fractions & Mixed Numbers

Solve each equation.

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

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

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

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

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

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

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

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

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

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

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

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Adding/Subtracting Positive/Negative Numbers

Solve each equation.

1) $(-2) + 3$

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

3) $3 - (-8)$

4) $(-9) + 14$

5) $5 + (-8)$

6) $(-27) - 24$

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

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

9) $38 - (-17)$

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

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

12) $(-6) - 24$

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

14) $15 - 13 + 2$

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

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

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Multiplying/Dividing Positive/Negative Numbers

Solve each equation.

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

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

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

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

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

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

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

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

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

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

11) $153 \div 17$

12) $12 \div -3$

13) $48 \div 6$

14) $-120 \div -20$

15) $306 \div 18$

16) $65 \div 13$

17) $-85 \div -17$

18) $128 \div -16$

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19) $-180 \div 15$

20) $234 \div -13$

21) -11×9

22) -7×-12

23) -8×-11

24) -6×4

25) -3×-11

26) -5×-9

27) 9×-7

28) -9×-3

29) 12×-12

30) 11×-6

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

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

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

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

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

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

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Order of Operations

Evaluate each expression.

1) $3(6+7)$

2) $5 \times 3 \times 2$

3) $72 \div 9 + 7$

4) $2 + 7 \times 5$

5) $9 + 8 - 7$

6) $9 - 32 \div 4$

7) $5(10-1)$

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

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

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

11) $9 + 9 + 6 - 5$

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

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

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

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

1) $14, 21, 7$

2) $8, 19, 23$

3) $13, 29, 21$

4) $19, 14, 8$

5) $14, 28, 21$

6) $18, 29, 21$

7) $24, 11, 14$

8) $17, 30, 11$

9) $27, 23, 15$

10) $21, 11, 1$

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

1) $56, 42, 98$

2) $77, 33, 22$

3) $80, 16, 96$

4) $65, 39, 13$

5) $14, 49, 7$

6) $48, 64, 32$

7) $16, 72, 80$

8) $99, 11, 88$

9) $4, 37, 51$

10) $7, 28, 98$

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Adding/Subtracting Decimals

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

1) $5.4 + (-9.7)$

2) $10.8 + (-4.73)$

3) $(-0.5) + 0.3$

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

5) $3.305 + 1.7$

6) $(-3.6) + 0.43$

7) $(-4.3) + 14.5$

8) $(-7.1) + 3.63$

9) $13.7 + 3.2$

10) $(-10.9) + 6.1$

11) $2.2 - 7.3$

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

13) $2.9 - 9.4$

14) $(-3.9) - 8.9$

Multiplying/Dividing Decimals

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

1) -5.5×-4.87

2) 1.7×-2.1

3) 0.2×-1.6

4) 1.7×-3.1

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5) -4.6×-7.2

6) -5.928×-11.6

7) -1.5×-7.1

8) 7.8×5.1

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

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

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

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

13) $6.23 \div 2$

14) $4.57 \div 3$

15) $6.45 \div 5$

16) $315.2 \div 0.2$

17) $425.4 \div 0.5$

18) $6 \div 1.25$

19) $80 \div 1.5$

20) $46.483 \div 0.2$

21) $56.24 \div 0.02$

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) $a + 6 + b; use\ a = 1, and\ b = 6$

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

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

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

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

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

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

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

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

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) $26 = 8 + v$

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) $v - 15 = -27$

10) $n + 16 = 19$

11) $-104 = 8x$

12) $14b = -56$

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

14) $10n = 40$

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

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

17) $-15x = 0$

18) $-17x = -204$

19) $21 = -7n$

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

21) $-126 = 14k$

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22) $-143 = -11x$

23) $-16 + x = -15$

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

25) $-17 = x - 15$

26) $n - 8 = -10$

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

28) $a + 11 = 20$

29) $-7 + m = 8$

30) $18 + m = 8$

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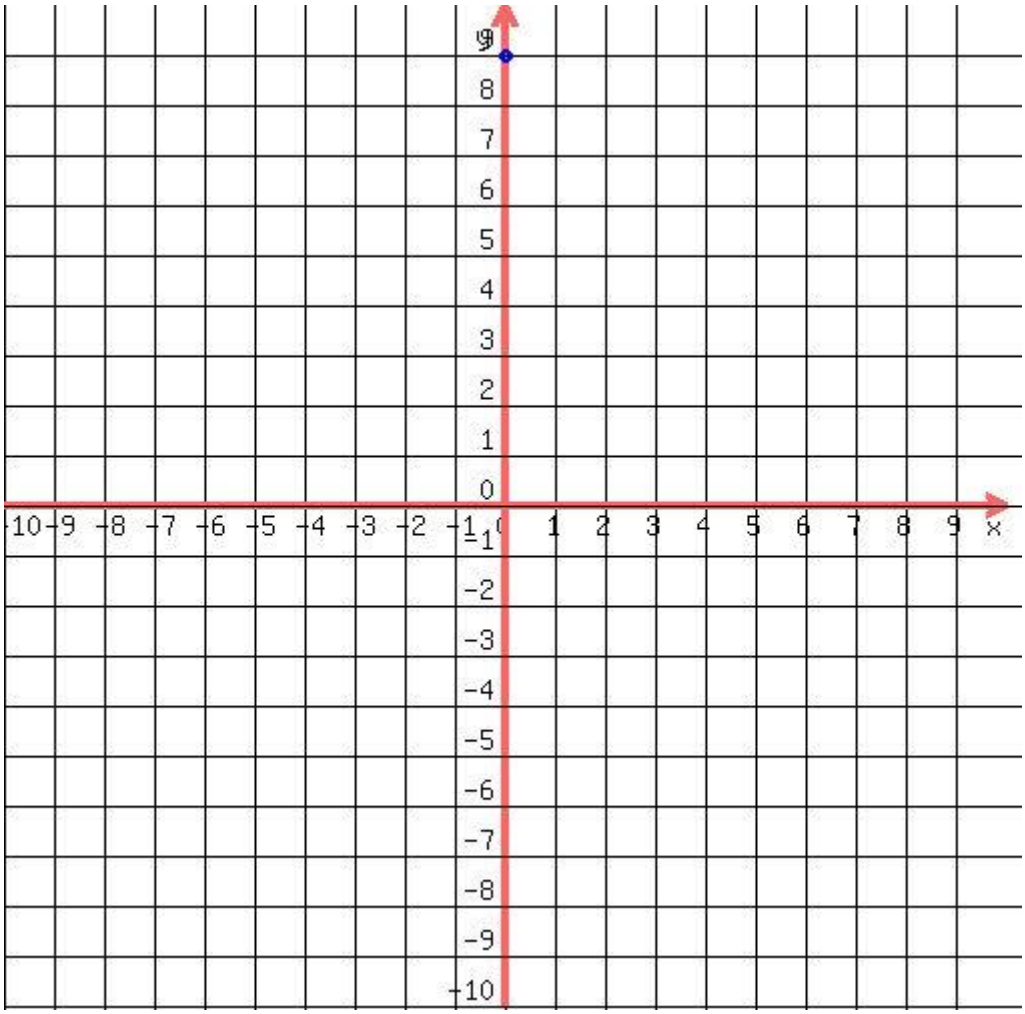
Four Quadrant Graphic Puzzle



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

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

3) 10^2

4) $(-5)^3$

5) 12^2

6) $(-9)^2$

7) 2^5

8) $(-3)^4$

9) 6^3

10) 10^{-3}

11) 10^0

12) 10^4

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

14) 2^{-5}

15) 6^{-3}

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

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

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

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Properties of Exponents - Write the answer as one power.

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

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

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

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

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

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

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

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

9) $(y^5)^2$

10) $(10^0)^3$

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

1) 2.54×10^2

2) 8.59×10^5

3) 3.331×10^6

4) 7.21×10^{-3}

5) 5.88×10^{-4}

6) $75{,}000{,}000$

7) 208

8) 0.093

9) 0.00852

10) 0.050