

Converting Decimals to Fractions

<https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/algebra-foundations-decimal-operations/v/converting-decimals-to-fractions-1-ex-3>

5. *Rename the following decimals as fractions in reduced form:*

- a. 0.02 _____ b. 0.6 _____ c. 1.2 _____ d. 0.75 _____

Percentages

<https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/algebra-foundations-decimal-operations/v/finding-percentages-example>

6. *Change the following decimals or fractions to a percent:*

- a. .25 _____ b. $\frac{1}{2}$ _____ c. .9 _____ d. $\frac{35}{100}$ _____ e. $\frac{1}{5}$ _____

Change the following percents to decimals:

- d. 40% _____ e. 0.5% _____ f. 120% _____

Rounding

7. a. Round 4.3228 to the nearest hundredth. _____

b. Round 86.8954776 to the nearest ten thousandth. _____

Evaluating Expressions:

<https://www.khanacademy.org/math/algebra/introduction-to-algebra/variable-and-expressions/v/evaluate-a-formula-using-substitution>

8. *Evaluate the following expressions and then simplify. Let $a = 8$ and $b = -2$.*

- a. ab b. $a - b$ c. $\frac{a}{b}$ d. $-2a^2 - a - 4$

Writing Algebraic expressions:

<https://www.khanacademy.org/math/algebra/introduction-to-algebra/writing-expressions-tutorial/v/writing-expressions-1>

9. **Write the following verbal expressions as algebraic expressions:**

- a. the sum of 3 and a number x

- b. 3 less than a number y

- c. the product of 6 and the sum of five and a number

Combining Like Terms

<https://www.khanacademy.org/math/algebra/introduction-to-algebra/manipulating-expressions/v/combining-like-terms-1>

10. **Simplify the following expressions by combining like terms:**

- a. $7a + 2a$
- b. $8x - 10x$
- c. $6ab + 3ba$
- d. $5c - 6c + 8c - 9c$

Order of Operations

<https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/algebra-foundations-order-of-operations/v/introduction-to-order-of-operations>

11. **Simplify the following expressions by applying the order of operations:**

- a. $2 + 7 \cdot 4$
- b. $8 - 35 \div 7$
- c. $6(2) + 12 \div 3(2)$

- d. $14 - 2 + 6$
- e. $14 - (2+6)$
- f. $(-3)^2$
- g. -3^2

f. Add parentheses to make the sentence true: $24 \cdot 2 \div 2 \cdot 4 = 96$

Simplifying Absolute Value Expressions

<https://www.khanacademy.org/math/pre-algebra/negatives-absolute-value-pre-alg/abs-value-pre-alg/v/absolute-value-of-integers>

16. *The absolute value of a number is its distance from 0 on a number line. Find the absolute value of each of the following:*

- a. $|-5|$ b. $|2-5|$ c. $|-5-3|$ d. $|-5-(-6)|$

Operations with fractions:

<https://www.khanacademy.org/math/pre-algebra/fractions-pre-alg/fractions-unlike-denom-pre-alg/v/adding-and-subtracting-fractions>

https://www.khanacademy.org/math/arithmetic/fractions/multiplying_fractions/v/multiplying-fractions

<https://www.khanacademy.org/math/arithmetic/fractions/div-fractions-fractions/v/another-dividing-fractions-example>

<https://www.khanacademy.org/math/pre-algebra/fractions-pre-alg/comparing-fractions-pre-alg/v/comparing-fractions>

17. *Add or subtract the following, and then simplify:*

- a. $\frac{2}{3} + \frac{5}{6}$ b. $-\frac{1}{4} + (-\frac{5}{8})$ c. $\frac{5}{16} - \frac{3}{8}$

18. *Multiply or divide the following, and then simplify:*

- a. $\frac{2}{3} \cdot \frac{5}{6}$ b. $-\frac{4}{3} \cdot \frac{6}{7}$ c. $-\frac{1}{3} \cdot (-\frac{5}{6})$ d. $\frac{5}{10} \div \frac{7}{11}$

19. *Compare the following fractions using an inequality symbol. (> or <)*

- a. $\frac{3}{4}, \frac{7}{8}$ b. $\frac{3}{8}, \frac{1}{3}$ c. $-\frac{7}{12}, -\frac{3}{8}$

Exponents

<https://www.khanacademy.org/math/pre-algebra/exponents-radicals/World-of-exponents/v/introduction-to-exponents>

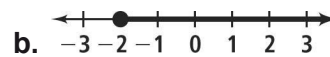
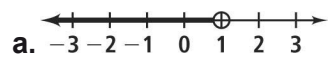
20. a. Rewrite $6 \cdot 6 \cdot 6$ as an exponential expression.

b. Write x^4 in expanded form.

Inequalities

<https://www.khanacademy.org/math/pre-algebra/applying-math-reasoning-topic/greater-than-less-than/v/plotting-inequalities-on-a-number-line>

21. *Write an inequality for each graph.*



22. *Graph each inequality on a number line.*

a. $y < -2$

b. $t \geq 4$

Sets of Real Numbers

23. Match the following terms to the appropriate set of numbers by writing the corresponding letter in the answer blank.

- | | | |
|----------------------|-------|-----------------------------------|
| a. Natural numbers | _____ | {...-3, -2, -1, 0, 1, 2, 3,...} |
| b. Whole numbers | _____ | ex. 3, $\frac{1}{2}$, 0.25 |
| c. Integers | _____ | ex. π , $\sqrt{3}$, 2.164... |
| d. Rational numbers | _____ | {1,2,3,...} |
| e. Irrational number | _____ | {0,1,2,3...} |

Properties of real numbers:

24. Match the property with its example by writing the corresponding letter in the answer blank.

- | | | |
|------------------------------------|-------|---|
| a. Commutative | _____ | $\frac{2}{3} \cdot \frac{3}{2} = 1$ |
| b. Associative | _____ | $4(x + 7) = 4x + 28$ |
| c. Distributive | _____ | $53 \cdot 0 = 0$ |
| d. Multiplicative Inverse | _____ | $12 + 917 = 917 + 12$ |
| e. Multiplicative Property of Zero | _____ | $-6 + 6 = 0$ |
| f. Additive Identity | _____ | $7 + 0 = 7$ |
| g. Additive Inverse | _____ | $3 \cdot (4 \cdot 6) = (3 \cdot 4) \cdot 6$ |

25. ***Simplify the following expressions by applying the distributive property:***

a. $2(x + 7)$

b. $-5(3x - 9)$

c. $-(10x + 3)$

One and Two step equations:

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-variables-expressions/cc-7th-2-step-equations/v/why-we-do-the-same-thing-to-both-sides-two-step-equations>

26. *Solve the following Equations:*

a. $6 = p - 8$

b. $z + 5 = 4$

c. $-25 = -5x$

d. $25 = \frac{z}{-4}$

e. $\frac{3}{4}b = 15$

f. $-8 + 3h = 1$

g. $13 + \frac{a}{11} = 7$

h. $7 = \frac{13+a}{11}$

Setting up and solving proportions

<https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-ratio-proportion/cc-7th-write-and-solve-proportions/v/writing-proportions>

27. *Solve the following proportions:*

a. $\frac{-13}{15} = \frac{k}{-5}$

b. $\frac{-14}{h} = \frac{-2}{5}$

Set up a proportion and solve for the missing quantity:

c. Jennifer is ordering cake for her wedding reception. If one cake will feed 18 people, how many cakes does she need to order for 150 people?

Graphing Points and Equations

<https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-negative-number-topic/cc-6th-coordinate-plane/v/plot-ordered-pairs>

28. *Identify the ordered pairs on the graph to the right:*

A=

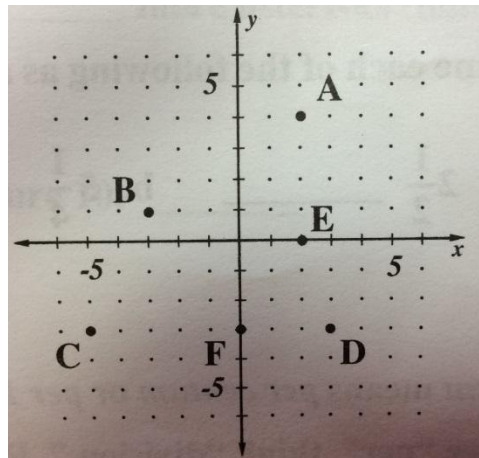
B=

C=

D=

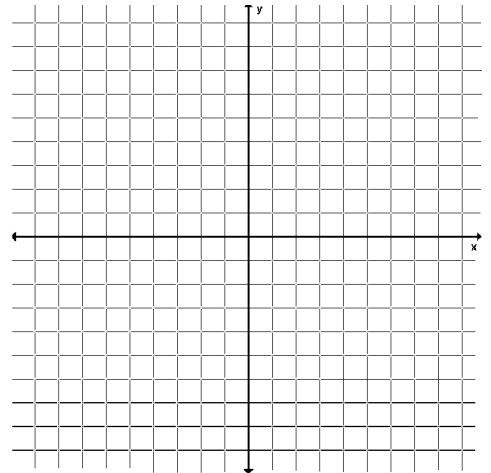
E=

F=



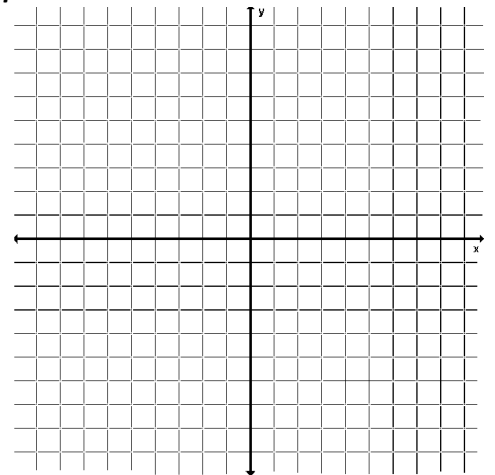
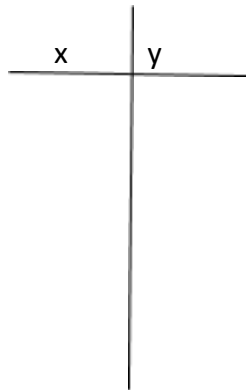
29. Graph the ordered pairs on the coordinate plane to the right:

- a. A(0,0)
- b. B(4,1)
- c. C(1,4)
- d. D (-5, 3)
- e. E(-2,-6)
- f. F(2,0)



30. Create a table of values for the equation below and then graph the equation on the coordinate plane at the right:

$y = 4x - 6$



Slopes of Linear Equations:

<https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/8th-slope/v/slope-of-a-line>

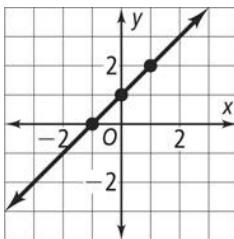
<https://www.khanacademy.org/math/algebra/two-var-linear-equations-and-intro-to-functions/slope/v/slope-of-a-line-2>

Slope formula: for any two coordinates (x_1, y_1) (x_2, y_2)

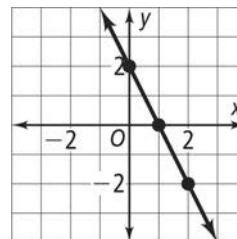
$$\text{Slope} = m = \frac{y_2 - y_1}{x_2 - x_1}$$

31. **Find the slope of the lines in the graphs below:**

a.



b.



32. **Find the slope of the line that passes through each pair of points.**

a. $(-4, 5), (1, 1)$

b. $(0, 0), (-1, 3)$