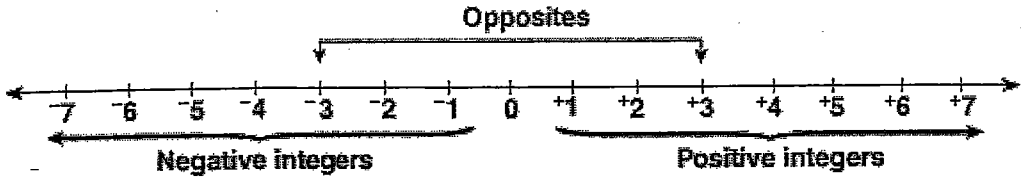
KSS Math

Integer Review



□ the number line goes on forever in both directions. This is indicated by the arrows.
□ Whole numbers greater than zero are called **positive integers**. These numbers are to the right of zero on the number line.
□ Whole numbers less than zero are called **negative integers**. These numbers are to the left of zero on the number line.
□ the integer zero is neutral. It is neither positive nor negative.

When performing operations with integers, *remember:*

- simplify signs!
  - (+)(+) = + ex. (4)(7) = 28 or 5 + 4 = 9
  - (-)(-) = + ex. (-4)(-7) = 28 or 5 – (-4) = 5 + 4 = 9
  - (+)(-) = - ex. (4)(-7) = -28 or 5 + (-4) = 5 – 4 =1
  - (-)(+) = - ex. (-4)(7) = -28 or (-5) + 4 = -1
- it's useful to think of temperature on a thermometer when adding/subtracting integers… if it's -3 and the temperature goes up or warms 2 degrees, it will be -1 (-3 + 2 = -1).
- when multiplying/dividing integers remember that like signs (two positives or two negatives) are positive and unlike signs (one positive and one negative) are negative. Simplify touching signs first!

1) (+10) - (-16) =

2) (-99) - (+16) =

3) (+7) - (+16) =

4) (+78) + (-66) =

5) (-59) x (+32) =

6) (+43) + (+43) =

7) (-73) x (+30) =

8) (+726) ÷ (+33) =

9) (+50) + (+88) =

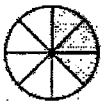
10) (+1296) ÷ (-16) =

Fraction Review

Fractions describe a portion of something divided into equal parts. The numerator (on top) is how many you have (shaded) and the denominator (on bottom) is how many total parts possible. On the left indicate what fraction is shown in the drawing. On the right, shade each drawing to describe the fraction given.

 _____

 $\frac{1}{10}$

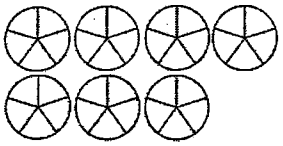
 _____

 $\frac{11}{12}$

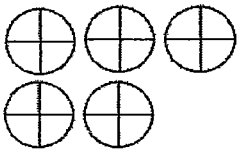
Fractions can be written as improper (numerator is bigger than the denominator) or as a mixed number. **Convert** the following improper to mixed numbers and mixed numbers to improper fractions. Draw a picture for the first couple to help.

$\frac{5}{2}$ = _____

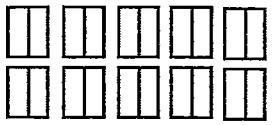
$6\frac{4}{5}$ = _____



$\frac{17}{4}$ = _____



$9\frac{1}{2}$ = _____

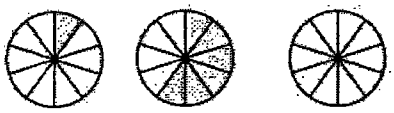


Equivalent fractions may look like different numbers but they express the same ratio. They are achieved by multiplying the numerator and denominator by the same number (integer).

$\frac{1}{3} = \frac{\quad}{6} = \frac{\quad}{9}$

$\frac{1}{2} = \frac{\quad}{4} = \frac{3}{\quad} = \frac{\quad}{8} = \frac{5}{\quad} = \frac{6}{\quad} = \frac{\quad}{14}$

To **add** or **subtract** fractions you need a common denominator and then just add/subtract the numerators. If a common denominator is not given in the question, then you can create this by writing one or both fraction as an equivalent fraction (multiplying numerator and denominator by a number).



$\frac{1}{10} + \frac{6}{10} =$ _____

$\frac{2}{4} + \frac{1}{2} =$ _____

$\frac{1}{3} + \frac{3}{4} =$ _____

$\frac{1}{3} + \frac{9}{10} =$ _____

$\frac{1}{5} + \frac{3}{5} =$ _____

$\frac{1}{3} + \frac{1}{3} =$ _____

$\frac{4}{5} - \frac{5}{10} =$ _____

$\frac{4}{5} - \frac{1}{3} =$ _____

$\frac{2}{3} - \frac{2}{4} =$ _____

Multiplying fractions is *straight forward*. You just multiply numerators together and denominators together. You do not need common denominators to multiply or divide fractions.

$\frac{1}{3} \times \frac{1}{2} =$ _____ $\frac{1}{2} \times 6 =$ _____

$\frac{8}{10} \times \frac{3}{5} =$ _____ $\frac{9}{10} \times 2 =$ _____

Dividing fractions is the same as multiplying by the reciprocal. The reciprocal of a number is the number that when multiplied gives you a product of one. You do not need common denominators to multiply or divide fractions. Another way to describe how to divide fractions is to "kiss and flip" which means to change the division symb

$\frac{2}{5} \div \frac{3}{4} =$ _____ $7 \div \frac{2}{4} =$ _____

$\frac{1}{2} \div \frac{5}{10} =$ _____ $\frac{1}{5} \div 3 =$ _____

Review of Operations with Fractions

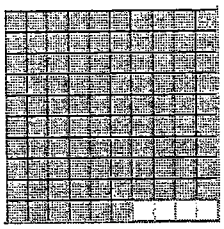
Addition: +	Subtraction: -	Multiplication: ×	Division: ÷
-create a common denominator -add numerators *only*	-create a common denominator -minus numerators *only*	-multiply numerators together and denominators together	-change ÷ to × and flip the second fraction and multiply as normal

Percent Review

A **percent** is a ratio or fraction with a denominator of 100. It is a ratio of what you have out of how much is possible in total:

$$\% = \frac{part\ you\ have}{total\ available} \times 100$$

The grid to the left is a visual representation of 96%. There are 96 shaded squares out of 100 total squares.



$$96\% = \frac{96}{100} \times 100$$

Note: Your denominator (total) does not need to be 100.

If you got 35 out of 40 correct on you last math test then: $\% = \frac{35}{40} \times 100 = 87.5\%$ ← That's an A!

You will need to convert between percent's to fractions to decimals...$96\% = \frac{96}{100} = .96$

- Writing a percent as a *fraction*: just think of the meaning...out of 100
  - $87.5\% = \frac{87.5}{100} = \frac{875}{1000} = \frac{175}{200} = \frac{7}{8}$
  - add zero's if necessary and reduce to lowest terms
- Writing a *fraction* as a percent: go backwards
  - $\frac{7}{8} \times 100 = 87.5\%$

- Writing a percent as a *decimal*: again think of the meaning out of 100 and just divide by 100
  - $87.5\% = \frac{87.5}{100} = 0.875$
- Writing a *decimal* as a percent: go backwards (multiply by 100)
  - $0.875 \times 100 = 87.5\%$

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

1) 815%

2) 0.9%

3) 0.8%

4) 739%

Write each as a fraction.

5) 0.8%

6) 250%

7) 0.9%

8) 130.2%

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

9) 0.009

10) 7.43

11) $\frac{1}{164}$

12) $4\frac{73}{90}$

Find the selling price of each item.

13) Cost: \$24.50
Markup: 20%

14) Cost: \$1,300.00
Markup: 20%

15) Original price: \$73.95
Discount: 40%

16) Original price: \$0.95
Discount: 20%

17) Original price: \$9,000.00
Tax: 2%

18) Original price: \$10.00
Tax: 1%

19) Cost of a microphone: \$69.99
Markup: 65%
Discount: 55%
Tax: 1%

20) Cost of a computer game: \$48.50
Markup: 30%
Discount: 50%
Tax: 1%