

Problem 1

What is the value?

$$(-3)(2) + 4 + (-16) \div 4 + 3$$

1. First, **multiply and divide**

from left to right.

$$(-3)(2) + 4 + (-16) \div 4 + 3$$

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

2. Then **add and subtract**

from left to right.

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

$$-2 + (-4) + 3$$

$$-6 + 3 = -3$$

Problem 2

To solve the problem, write a math expression.

Manny bought 8 gallons of gas. He paid \$4 for each gallon.

What is the change in the amount of money Manny has?

Manny *paid* \$4 for each gallon, so the 4 is negative.

Manny bought 8 gallons. So, multiply by the cost of one gallon by 8.

$$8(-4) = -32$$

Manny has \$32 less now.

Find the value.

1. $(-4)(-5) + 19$

2. $(-9)(4) + 31$

3. $(-36) \div 9 + 4 + (-2)(-3)$

4. a. Solve the expression and state what that value represents.

$$3(-20) + 5$$

To multiply fractions and mixed numbers:

Step 1: Write any mixed numbers as improper fractions.

Step 2: Multiply the numerators.

Step 3: Multiply the denominators.

Step 4: Write the answer in simplest form.

Remember, positive times negative equals

$$\begin{aligned} \text{Multiply: } & \frac{4}{9} \square \frac{8}{3} \\ \frac{4}{9} \square \frac{3}{8} &= \frac{4 \square 3}{9 \square 8} \\ &= \frac{12}{72} \\ &= \frac{1}{6} \end{aligned}$$

Divide numerator and denominator by 12, the GCF.

$$\begin{aligned} \text{Multiply: } & 6\frac{1}{4} \square \left(-1\frac{4}{5}\right) \\ & 6\frac{1}{4} \square \left(-1\frac{4}{5}\right) = \frac{25}{4} \square \left(\frac{-9}{5}\right) \\ &= \frac{25 \square (-9)}{4 \square 5} \\ &= \frac{-225}{20} \\ &= -11\frac{1}{4} \end{aligned}$$

Use the models to solve the problems.

1. One cup of dog food weighs $1\frac{4}{5}$ ounces. A police dog eats $6\frac{1}{3}$ cups of food a day. How many ounces of food does the dog eat each day?

2. A painter spends 3 hours working on a painting. A sculptor spends $2\frac{2}{3}$ as long working on a sculpture. How long does the sculptor work?

3. A meteorite found in the United States weighs $\frac{7}{10}$ as much as one found in Mongolia. The meteorite found in Mongolia weighs 22 tons. How much does the one found in the United States weigh?

4. A chicken salad recipe calls for $\frac{1}{8}$ pound of chicken per serving. How many pounds of chicken are needed to make $8\frac{1}{2}$ servings?

<h3 style="text-align: center; color: red;">Addition</h3> <ul style="list-style-type: none"> > Find the decimal > Line up the decimals > Fill in empty spots with zero > Add > Bring down the decimal in your answer <p>EXAMPLE <small>Rewritten with decimals lined up...</small></p> $\begin{array}{r} 10.5 + 11.74 \\ 10.50 \\ + 11.74 \\ \hline 22.24 \end{array}$	<h3 style="text-align: center; color: green;">Subtraction</h3> <ul style="list-style-type: none"> > Find the decimal > Line up the decimals > Fill in empty spots with zero > Subtract > Bring down the decimal in your answer <p>EXAMPLE <small>Rewritten with decimals lined up...</small></p> $\begin{array}{r} 12.7 - 9.23 \\ 12.\overset{6}{10}0 \\ - 9.23 \\ \hline 3.47 \end{array}$
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Rules of Decimals

<h3 style="text-align: center; color: purple;">Multiplication</h3> <ul style="list-style-type: none"> > The number with most digits goes on top > Decimals do not have to line up > Multiply like normal > Count how many places in first number the decimal is moved over > Count how many places in 2nd number the decimal is moved over > This is how many places you move the decimal in your answer <p>EXAMPLE</p> $\begin{array}{r} 1.201 < 3 \text{ DECIMAL PLACES} \\ \times 25 < 2 \text{ DECIMAL PLACES} \\ \hline 6005 \\ 24020 \\ \hline 30025 < 5 \text{ DECIMAL PLACES} \end{array}$	<h3 style="text-align: center; color: orange;">Division</h3> <ul style="list-style-type: none"> > Divisor can not have a decimal > Move the divisor decimal so it is a whole number > Move the same amount of places in dividend > Place a decimal straight up where you write your answer, rewrite problem > Divide like normal <p>EXAMPLE</p> <p><small>DIVISOR ></small> $0.3 \overline{)14.1}$</p> $\begin{array}{r} 4.7 \\ 3 \overline{)14.1} \\ \underline{-12} \\ 21 \\ \underline{-21} \\ 0 \end{array}$
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<h3 style="text-align: center; color: red;">Addition</h3> $\begin{array}{r} 7.12 \\ + 3.23 \\ \hline 13.72 \\ + 15.77 \\ \hline 23.50 \\ + 32.74 \\ \hline 56.24 \end{array}$	<h3 style="text-align: center; color: green;">Subtraction</h3> $\begin{array}{r} 8.08 \\ + 2.78 \\ \hline 10.86 \\ 23.50 \\ + 32.74 \\ \hline 56.24 \end{array}$
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Practice Decimal Operations

<h3 style="text-align: center; color: purple;">Multiplication</h3> $\begin{array}{r} 7.12 \\ \times 0.23 \\ \hline 13.72 \\ \times 5.77 \\ \hline 23.50 \\ \times 32.74 \\ \hline 56.24 \end{array}$	<h3 style="text-align: center; color: orange;">Division</h3> $\begin{array}{r} 1.58 \\ \times 1.78 \\ \hline .2 \overline{)14.8} \\ .5 \overline{)35.0} \\ \hline .25 \overline{)30.0} \\ .7 \overline{)42.0} \end{array}$
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