

Multiplication and Division of Real Numbers

Multiplying and Dividing Numbers with the Same Sign
the answer is always **POSITIVE!!**
Ex: $(-3)(-5) = 15$ $(-15) \div (-5) = 3$

Multiplying and Dividing Numbers with Different Signs
the answer is always **NEGATIVE!!!**
Ex: $(3)(-5) = -15$ $(-15) \div 5 = -3$

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Find each product. Simplify, if necessary.

$-8(12)$ $(-1.2)^2$ $-7 \cdot 1.1$ $10(-2.5)$

$\begin{array}{r} 12 \\ \times 8 \\ \hline -96 \end{array}$ $\begin{array}{r} -1.2 \\ \times -1.2 \\ \hline 24 \\ + 120 \\ \hline 1.44 \end{array}$ -7.7 -25

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Multiplying fractions

- Multiply top numbers.
- Multiply bottom numbers. **OR**
- Reduce.

- Cross cancel.
- Multiply top numbers.
- Multiply bottom numbers.

Ex. $\frac{1}{3} \cdot \frac{3}{5} = \frac{1}{5}$ $\frac{1}{7} \cdot \frac{1}{2} = \frac{1}{14}$ $\frac{-5}{8} \cdot \frac{2}{9} = \frac{-5}{36}$

$\frac{3 \div 3}{15 \div 3} = \frac{1}{5}$ $\frac{3 \div 3}{42 \div 3} = \frac{1}{14}$ $\frac{-5}{36}$

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What is each product?

A. $3(-5) = -15$

B. $26(0.5) = 13$

C. $(\frac{3}{4})^2 = \frac{9}{16}$

D. $(-4)^2 = 16$

E. $\frac{3}{7} \cdot \frac{9}{10} = \frac{27}{70}$

F. $\frac{2}{11} \cdot (-\frac{11}{2}) = -1$

G. $3 \cdot (-\frac{1}{2}) = -\frac{3}{2}$

H. $\frac{1}{9} \cdot (-\frac{3}{4}) = -\frac{1}{12}$

Jan 5-1:18 PM

Divide the following:

A. $48 \div 3 = 16$

B. $-46 \div (-2) = 23$

C. $81 \div (-9) = -9$

D. $7.5 \div 3 = 2.5$

E. $-2.25 \div 0.25 = -9$
9 quarters = 2.25

F. $-0.5 \div 2 = -0.25$

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A sky diver's elevation changes by -3600 feet in 4 minutes after the parachute opens. What is the average change in the sky divers elevation each minute?

$\frac{-3600}{4} = -900 \text{ft}$

You make five withdrawals of equal amounts from your bank account. The total amount you withdraw of \$360. How much are you withdrawing each time?

$\frac{360}{5} = 72$

$5 \overline{)360}$
 $\underline{35}$
 10
 $\underline{10}$
 0

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Dividing fractions

1. Flip **second** number.
2. Follow multiplication rules.

Ex. $\frac{1}{3} \div \frac{3}{5}$ $\frac{3}{7} \div \frac{6}{1}$ $\frac{-5}{8} \div \frac{2}{9}$

$\frac{1}{3} \times \frac{5}{3}$ $\frac{3}{7} \times \frac{1}{6}$ $\frac{-5}{8} \times \frac{9}{2}$

$\frac{5}{9}$ $\frac{1}{14}$ $\frac{-45}{16}$

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Find the value of the expression $\frac{x}{y}$ for the given values of x and y . Write your answer in the simplest form.

A. $x = -\frac{2}{3}, y = -\frac{1}{4}$ B. $x = -\frac{5}{6}, y = \frac{3}{5}$ C. $x = \frac{2}{7}, y = -\frac{20}{21}$

$\frac{-2}{3} \div -\frac{1}{4}$ $-\frac{5}{6} \div \frac{3}{5}$ $\frac{2}{7} \div -\frac{20}{21}$

$\frac{-2}{3} \times -\frac{4}{1}$ $-\frac{5}{6} \times \frac{5}{3}$ $\frac{2}{7} \times -\frac{21}{20}$

$\frac{8}{3}$ $-\frac{25}{18}$ $-\frac{3}{10}$

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Classwork: worksheet #1 - 23

Final Five

Describe the error. Then correctly solve the problem.

~~$-\frac{3}{4} \div \frac{2}{5} = -\frac{4}{3} \cdot \frac{2}{5}$~~
 ~~$= -\frac{8}{15}$~~

Aug 18-3:18 PM