

Section 3.4

Section 3.4 Multiplying Rational Numbers

Review

When multiplying rational numbers, use the rules for multiplying integers:

$\begin{array}{l} + \text{ and } + = + \\ - \text{ and } - = + \end{array} \right)$ same signs is POSITIVE

$\begin{array}{l} + \text{ and } - = - \\ - \text{ and } + = - \end{array} \right)$ opposite signs is NEGATIVE

Example 1: Multiply the following.

a) $(-6) \times (-3)$

b) $20 \times (-2)$

c) $(-1.5) \times 1.8$

d) $(-2.6) \times (-3.25)$

e) $\left(-\frac{2}{5}\right) \times \frac{3}{8}$

f) $3 \times \frac{-5}{8}$

g) $2\frac{1}{4} \times \left(-\frac{2}{3}\right)$

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Example 2: Find the missing factor.

a) $\frac{3}{5} \times _ = \frac{-6}{25}$

b) $_ \times \frac{1}{3} = \frac{1}{4}$

Remember to write your final answer in lowest terms. You can reduce after you multiply but you can also reduce BEFORE you multiply.

Cross reduce:

$$\frac{-11}{7} \times \frac{-21}{44}$$

Cross reduction is helpful when multiplying large numbers. It is a shortcut to use should you choose to!

Example 3: Reduce first then multiply.

a) $\frac{8}{3} \times \frac{-7}{4}$

b) $\frac{9}{16} \times \frac{14}{3}$

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Example 4: Multiply. $(0.75)\left(\frac{-1}{8}\right)$

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