

Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

**Student Friendly:
"BEDMAS with fractions and decimals"**



Grade 9 Warm Up



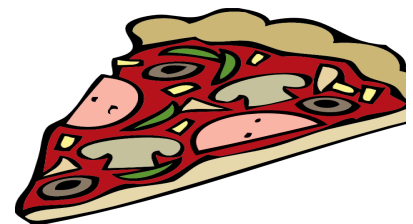
1) Determine the missing number in each statement. (Show Work)

a) $\underline{\hspace{2cm}} \div 18.6 = 2.1$

b) $\underline{\hspace{2cm}} \times -2.5 = 7.35$

c) $\frac{3}{4} \div \boxed{} = \frac{7}{12}$

d) $\boxed{} \div \frac{2}{5} = \frac{3}{7}$





Grade 9 Warm Up



$$3 \times 4 = 12$$

1) Determine the missing number in each statement. (Show Work)

a) $\square \div 18.6 = 2.1$

$$\square = 2.1 \times 18.6$$

$$\square = 39.06$$

b) $\square \times -2.5 = 7.35$

$$\square = 7.35 \div (-2.5)$$

$$\square = -2.94$$

c) $\frac{3}{4} \div \square = \frac{7}{12}$

$$\square = \frac{3}{4} \div \frac{7}{12}$$

$$\square = \frac{3}{4} \times \frac{12}{7}$$

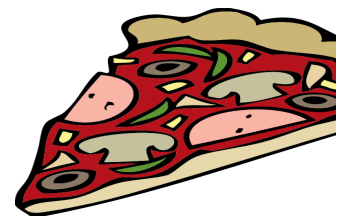
$$\square = \frac{3}{1} \times \frac{3}{7}$$

$$\square = \frac{9}{7}$$

d) $\square \div \frac{2}{5} = \frac{3}{7}$

$$\square = \frac{3}{7} \times \frac{2}{5}$$

$$\square = \frac{6}{35}$$



Do we need more practice?



$$\begin{aligned}
 1) \quad & 3 - [(-5) + 1]^3 \\
 & = 3 - [-4]^3 \\
 & = 3 - [-64] \\
 & = 3 + +64 \\
 & = 67
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & [(-3 + 5)^2 + 6(-2) + 7(3)]^2 \\
 & [(2)^2 + \underbrace{6(-2)} + \underbrace{7(3)}]^2 \\
 & [4 + \underbrace{(-12)} + 21]^2 \\
 & [\quad -8 + 21 \quad]^2 \\
 & [13 \quad]^2 \\
 & = 169
 \end{aligned}$$



Section 3.6

Order of Operations with Rational Numbers

Remember from
operations

"BEDMAS".....order of
↓ ↓

In the order that
they appear

Order of Operations

with

Rational Numbers



$$(-0.8) + 1.2 \div (-0.3) \times 1.5$$

$$(-0.8) + \underbrace{1.2 \div (-0.3)}_{(-4)} \times 1.5$$

$$(-0.8) + \underbrace{(-4) \times 1.5}_{(-6)}$$

$$= -6.8$$

$$2) (-3.6) - 1.7 \div [0.6 + (-0.8)]^2$$

$$(-3.6) - 1.7 \div [1.4]^2$$

$$(-3.6) - 1.7 \div [1.96]$$

$$(-3.6) - 0.8673 \dots$$

$$= -4.4673$$



$$\left(\frac{2}{3}\right)^2 = \left(\frac{2}{3}\right)\left(\frac{2}{3}\right)$$

$$\frac{2^2}{3^2} = \frac{4}{9}$$

$$\left(\frac{2}{3}\right)^3 = \frac{2^3}{3^3} = \frac{8}{27}$$

$$5^2 = 5 \times 5$$

$$5^3 = 5 \times 5 \times 5$$

$$\left(\frac{2}{3}\right)^{12} = \frac{4096}{531441}$$

Fractions

Remember fractions are just numbers

$$\left(\frac{2}{5}\right)^2 \div \left(\frac{2}{3} + \frac{4}{5}\right)$$

$$\left(\frac{2}{5}\right)^2 \div \left(\frac{10}{15} + \frac{12}{15}\right)$$

$$\left(\frac{4}{25}\right) \div \left(\frac{22}{15}\right)$$

$$\frac{\cancel{2}^2 \cancel{4}}{\cancel{5}^1 \cancel{25}} \times \frac{\cancel{15}^3}{\cancel{22}^1 \cancel{11}}$$

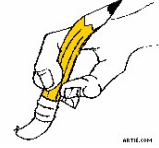
$$\frac{2}{5} \times \frac{3}{11}$$

$$= \frac{6}{55}$$

Using the Order of Operations with Fractions

Remember fractions are just numbers

BEDMAS



$$1) \left(-\frac{3}{5}\right)\left(\frac{2}{5}\right) - \left(\frac{7}{30}\right) \div \left[\frac{1}{2} + \left(-\frac{1}{6}\right)\right]$$

$$\left(-\frac{3}{5}\right)\left(\frac{2}{5}\right) - \left(\frac{7}{30}\right) \div \left[\frac{3}{6} + \frac{-1}{6}\right]$$

$$\frac{2}{6}$$

$$\left(-\frac{3}{5}\right)\left(\frac{2}{5}\right) - \left(\frac{7}{30}\right) \div \left[\frac{1}{3}\right]$$

$$\frac{-6}{25} - \frac{7}{30} \times \frac{3}{1}$$

$$\frac{-6}{25} - \frac{7}{10} \times \frac{1}{1}$$

$$\frac{-6}{25} - \frac{7}{10}$$

$$\frac{-12}{50} - \frac{35}{50}$$

$$- \frac{47}{50}$$

Class / Homework

Page 140 & 141

Write out the questions and show all work!
(Hint take your time and do one step at a time)

Questions

3,
4,