

6th Honors: How do we evaluate expressions including decimals and fractions?

Warm-up: Simplify

1.  $7.3(2.25)$

$$\begin{array}{r} 12.25 \\ \times 73 \\ \hline 1675 \\ 15750 \\ \hline 16425 \end{array}$$

2.  $\frac{0.255}{0.5} \xrightarrow{\cdot 10}$

$$5 \overline{) 2.55}$$

3.  $0.2(0.4)$

$$\begin{array}{r} 0.2 \\ \times 0.4 \\ \hline 08 \\ + 000 \\ \hline 0.08 \end{array}$$

4.  $20.16 \div 1.6$

$$\begin{array}{r} 12.6 \\ 16 \overline{) 201.6} \\ \underline{16} \phantom{0} \\ 41 \phantom{0} \\ \underline{32} \phantom{0} \\ 96 \\ \underline{96} \\ 0 \end{array}$$

Aug 12-8:16 PM

How do we evaluate expressions including fractions and decimals?

GEMDAS

Ex 1:  $3\frac{1}{3}\left(\frac{4}{5}\right) + \left(1\frac{1}{2}\right)^2$

$$\begin{array}{l} \frac{2}{3} \cdot \frac{3}{5} + \frac{9}{4} \\ 6 + 2\frac{1}{4} \\ \boxed{8\frac{1}{4}} \end{array}$$

$$\begin{array}{r} 3 \cdot 3 \\ 2 \cdot 2 \\ \hline 9 \\ 4 \\ \hline (1.2)(1.2)(1.2) \\ \begin{array}{r} 1.2 \\ \times 1.2 \\ \hline 24 \\ + 120 \\ \hline 144 \\ \times 1.2 \\ \hline 288 \\ + 1440 \\ \hline 1728 \end{array} \end{array}$$

Ex 2:  $2.5(7) - 1.2^3$

$$2.5(7) - 1.728$$

$$17.5 - 1.728$$

$$\boxed{15.772}$$

$$\begin{array}{r} 17.500 \\ - 1.728 \\ \hline 15.772 \end{array}$$

Aug 15-9:12 AM

Ex 3:  $\frac{16 - (5.65 + 2.8)}{8 - 2(1.5)}$

$$\frac{16 - 8.45}{8 - 3}$$

$$\frac{7.55}{5}$$

$$\begin{array}{r} 1.51 \\ 5 \overline{)7.55} \\ \underline{-5} \phantom{0} \\ 25 \\ \underline{-25} \\ 0 \end{array}$$

$$\boxed{1.51}$$

Ex 4:  $\frac{2.2}{3.5} \div 1\frac{2}{3}$

$$\frac{4}{15} \div \frac{5}{3}$$

$$\frac{4}{15} \cdot \frac{3}{5}$$

$$\boxed{\frac{4}{25}}$$

Aug 15-9:15 AM

Evaluate each expression if  $x = \frac{2}{3}$ ,  $y = 2\frac{1}{2}$ ,  $a = 4.8$ ,  $b = 2.25$

Substitute

Ex 5:  $b + a(3 + a)$

$$2.25 + 4.8(3 + 4.8)$$

$$2.25 + 4.8(7.8)$$

$$2.25 + 37.44$$

$$\boxed{39.69}$$

Ex 6:  $\frac{x + y}{3}$

$$\frac{\frac{2}{3} + 2\frac{1}{2}}{3}$$

$$\frac{2}{3}$$

$$\frac{\frac{4}{6} + 2\frac{3}{6}}{3}$$

$$\frac{2}{3}$$

$$3\frac{1}{6}$$

$$\frac{2}{3}$$

$$\frac{19}{26} \cdot \frac{8}{2}$$

$$\frac{19}{4}$$

$$\boxed{4\frac{3}{4}}$$

Aug 15-9:23 AM