Unit 1 Notes

Order of operations -

Parentheses
Exponents
Mult. ⟩
Div.
Add. ⟩
Subt.

Ex. 1   Simplify the expression

$$4 + 3^2 \times (8 - 6)$$

$4 + 3^2 \times 2$

$4 + 9 \times 2$

$4 + 18$

22

Ex. 2   Simplify the expression

$$10 - 12 \div (2 + 4)$$

$$10 - 12 \div 6$$

$$10 - 2$$

$$8$$

Ex. 3   Simplify the expression

$$\frac{4 \cdot 2}{4 \cdot 3} + \frac{1 \cdot 3}{4 \cdot 3}$$

$$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

$$\boxed{\frac{2}{3} \cdot \frac{1}{4}} \qquad \frac{2}{12} = \frac{1}{6}$$

Ex. 4   Evaluate the expression when $x = 5$, and $y = 2$.

$$\frac{4x + 3y}{2}$$

$$\frac{(4 \cdot 5 + 3 \cdot 3)}{2} = \frac{20 + 6}{2}$$

$$\frac{26}{2} = 13$$

Ex. 5   Evaluate the expression when $x = 5$, and $y = 2$.

$$\sqrt{x + 2y}$$

$$\sqrt{5 + 2 \cdot 2}$$

$$\sqrt{5 + 4}$$

$$\sqrt{9} = 3$$

Ex. 6   Write as a percent: .35

$$35\%$$

Write as a percent: $\dfrac{7}{10}$ 70%

.7

Ex. 7   Write as a decimal: 88%

.88

Write as a decimal: $\dfrac{8}{15}$ $= .5\overline{3}$

$\approx .53$

Ex. 8   Write as a fraction: 42%

$$\frac{42}{100} = \frac{21}{50}$$

Write as a fraction: .4

$$\frac{4}{10} = \frac{2}{5}$$

Ex. 9   Rewrite in simplest form.

$$5x + 3(2x - 8) + 12$$

$$5x + 6x - 24 + 12$$

$$11x - 12$$

Ex. 10   Rewrite in simplest form.

$$(x+3)(x+7)$$

$$x^2 + 21 + 10x$$

$$x^2 + 10x + 21$$

Ex. 10   Rewrite in simplest form.

$$(x+3)(x+7)$$

Ex. 11   Rewrite in simplest form.

$$\left(3x^5y^3\right)^2$$

$x \cdot x \cdot x \cdot x \cdot x$ · $x \cdot x \cdot y \cdot y \cdot x$

$$\left(3 \cdot x^5 \cdot y^3\right) \cdot \left(3 \cdot x^5 \cdot y^3\right)$$

$$9x^{10}y^6$$

Ex. 12   Rewrite in simplest form.

$$\left(4a^7b^2\right)\left(3ab^4\right)$$

$$12a^8b^6$$

Ex. 13   Rewrite in simplest form.

$$\frac{\overset{x \cdot x \cdot x}{20x^3 y^5}}{\underset{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}{10x^7 y^1}}$$

$$\frac{2y^4}{x^4}$$