

## Notes 3-3

Int 1

Distributive Property

Unit 3

**Distributive Property:** Multiply to each term inside the parentheses ( )

$$3(4x - 5) = 3 \cdot 4x - 5 \cdot 3 = \boxed{12x - 15}$$

**WORD PROBLEM:** A volleyball uniform costs \$13 for the shirt, \$11 for the pants, and \$8 for the socks. Write two equivalent expressions for the total cost of 12 uniforms.

Expression 1:

Expression 2:

$$12(13 + 11 + 8) = 12 \cdot 13 + 12 \cdot 11 + 12 \cdot 8$$

Now, find the total cost:

\$384.00

Simplify using the Distributive Property:

a)  $5(x+2)$   
 $5 \cdot x + 5 \cdot 2$   
 $\boxed{5x + 10}$

b)  $3(2x+4)$   
 $3 \cdot 2x + 3 \cdot 4$   
 $6x + 12$

c)  $2(3.6y+5)$   
 $2 \cdot 3.6y + 2 \cdot 5$   
 $\boxed{7.2y + 10}$

d)  $-6(g+2h)$   
 $-6g + -12h$   
 $\boxed{-6g - 12h}$

+ - is same as Subtract



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Simplify using the Distributive Property:

e)  $-9(5c+3d) \quad -9 \cdot 3 = -27$

$-45c - 27d$

f)  $-8(3.4w+6) \quad -8 \cdot 6 = -48$

$-27.2w - 48$

g)  $-4\left(\frac{2}{5}m - 9p\right)$

$-\frac{4}{1} \cdot \frac{2}{5}$

$-\frac{8}{5}m + 36p$

h)  $\frac{3}{8}(16m - 9p)$

$\frac{3}{8} \cdot 16 \rightarrow 6$   
 $\frac{3}{8} \cdot -9 \rightarrow -\frac{27}{8}$

$\frac{3}{8} \cdot 16 = 6$

$6m - \frac{27}{8}p$

i)  $\frac{1}{4}(20f - 10)$

$\frac{1}{4} \cdot 20 \quad \frac{1}{4} \cdot -10$

$\frac{20}{4}f - \frac{10}{4}$

$5f - \frac{5}{2}$

j)  $4(8r-5) - 32$  *\*ONLY Distribute into the ( )*

$32r - 20 - 32$

$32r - 52$

k)  $-3(-2w+9r)+r$

$-3 \cdot 2 = 6 \quad -3 \cdot 9 = -27$

$6w - 27r + r$

$6w - 26r$

*\*MUST Distribute First!!\**

l)  $5+3(-2x+7)$

$5 - 6x + 21$

$26 - 6x$

OR  $-6x + 26$

m)  $14-2(x+6) - 2 \cdot 6$

$14 - 2x - 12$

$2 - 2x$  OR  $-2x + 2$

n)  $8-4(2x+8)-5$

$8 - 8x - 32 - 5$

combine Like TERMS

$-29 - 8x$  OR  $-8x - 29$