

## Equation

## Unit 5.1

## Simplifying Algebraic Expressions Part I

1. Simplify the expressions as shown below.

Example:

$$\begin{aligned}5(3x + 2y) &= 15x + 10y & 15\left(-\frac{1}{3}x - \frac{1}{5}y\right) &= -5x - 3y \\-2(x - 4y) &= -2x + 8y & -15\left(-\frac{x}{3} + \frac{2}{5}y\right) &= 5x - 6y\end{aligned}$$

a.  $3(2x + y)$

h.  $10\left(-\frac{1}{2}x + \frac{7}{5}y\right)$

b.  $4(x - 6y)$

i.  $\frac{3}{4}\left(-\frac{3}{4}x - \frac{1}{3}y\right)$

c.  $5(3x - y)$

j.  $3(x - 2y + 3)$

d.  $9(-x - y)$

k.  $-5(3x - 7y + 1)$

e.  $2(-x + y)$

l.  $-6\left(-\frac{x}{2} - \frac{1}{3}y\right)$

f.  $-3(x - 4)$

m.  $-18\left(-\frac{5}{6}x - \frac{7}{9}y\right)$

g.  $-2(x + y)$

n.  $-\frac{1}{2}(6x - 4y + 8)$

2. Simplify the expressions as shown below.

Example:

$$4(3x + 1) - 2(3x - 5) = 12x + 4 - 6x + 10 = 6x + 14$$

a.  $4(x + 3) - 2(x + 1)$

i.  $5(x - 3) - 3(4x - 2)$

b.  $4(2x - 3) - 2(3x - 1)$

j.  $-5(3x - 1) - 2(5x + 4)$

c.  $3(4x + 1) - 2(x + 5)$

k.  $-(6x - 5) + 5(x + 1)$

d.  $3(4x - 1) - 2(x + 5)$

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

e.  $-3(4x - 1) - 2(x - 5)$

m.  $-(2x - 5) - 15\left(\frac{x}{5} + 2\right)$

f.  $8\left(\frac{x}{4} + 1\right) - 3(x - 5)$

n.  $(3x - 1) - 12\left(\frac{x}{3} - 1\right)$

g.  $-7(2x - 1) - 2(5x + 4)$

o.  $3(x + 4) + 2(3x + 2) + 4(2x - 5)$

h.  $5x - 2(x - 5) + 3(x - 4)$

p.  $2(3x - 1) - 4(5x + 2) + 6(x + 3)$