

# May 30 Algebra Review

## 1. Solve by substitution

$x - 2y = -1 \rightarrow x = 2y - 1$   
 $5x - 7y = 4$   
 $5(2y - 1) - 7y = 4$   
 $10y - 5 - 7y = 4$   
 $3y - 5 = 4$   
 $3y = 9$   
 $y = 3$   
 $x = 2 \cdot 3 - 1$   
 $x = 5$   
 $(5, 3)$

CK:  $5 \cdot 5 - 7 \cdot 3 \stackrel{?}{=} 4$   
 $25 - 21 = 4$

## ② Solve by linear combination

$5(5x - 2y = -15)$   
 $2(7x + 5y = 18)$   
 $\frac{25x - 10y = -75}{14x + 10y = 36}$   
 $\frac{39x = -39}{x = -1}$

$5(-1) - 2y = -15$   
 $-5 - 2y = -15$   
 $-2y = -10$   
 $y = 5$   
 $(-1, 5)$

CK:  $-7 + 25 \stackrel{?}{=} 18$   
 $18 = 18$

Ex 3  $2x^2 + 5x + 3 = 0$   
 $(2x + 3)(x + 1) = 0$   
 $2x + 3 = 0$  or  $x + 1 = 0$   
 $2x = -3$   
 $x = -\frac{3}{2}, -1$

Ex 4  $3x^2 + 8x - 3 = 0$   
 $(3x - 1)(x + 3) = 0$   
 $3x - 1 = 0$  or  $x + 3 = 0$   
 $3x = 1$   
 $x = \frac{1}{3}, -3$