

Solving A Linear Equation

- (1) Clear the equation of fractions by multiplying by the LCD.
- (2) Remove grouping symbols by multiplying out.
- (3) Isolate all terms containing the unknown on one side, and all other terms on the other side by transposition (addition and subtraction).
- (4) Factor out the unknown, Divide both sides by the multiplier of the unknown.
- (5) Reduce, if possible.

Examples:

(1) Solve $A = P(1+i)$ for i

$$A = P + Pi$$

$$A - P = Pi$$

$$\frac{A - P}{P} = i$$

(2) Solve $\frac{1}{x} = \frac{1}{2} - \frac{1}{3}$ Note: Don't invert.
 $x \neq 2-3$

$$\text{LCD} = 6x$$

$$x \neq -1$$

$$6 = 3x - 2x$$

$$6 = x$$

(3) $x - 3yy' = 2 + y'$ ($y' = y$ "prime")

$$x - 2 = y' + 3yy'$$

$$\frac{x - 2}{1 + 3y} = y'$$