

August 27, 2018

Completing the Square  
 \* used to solve Quadratic equations and re-write equations w/ Circles

$x^2 + 8x + 16$  Perfect Square Trinomial  
 $a = \frac{1}{1}$   $b = \frac{8}{2}$

$x$	$+4$
$x^2$	$4x$
$4x$	$16$

$= (x+4)(x+4) = (x+4)^2$

Aug 27-9:04 AM

$x^2 - 38x + c$

a.  $-38 \cdot \frac{1}{2} = -19$

b.  $(-19)^2 = 361$

↓  
c

Aug 27-9:15 AM

$m^2 + 24m + c$

a.  $24 \cdot \frac{1}{2} = 12$

b.  $(12)^2 = 144$

↓  
c

Aug 27-9:22 AM

$x^2 - \frac{5}{3}x + c$

a.  $-\frac{5}{3} \cdot \frac{1}{2} = -\frac{5}{6}$

b.  $(-\frac{5}{6})^2 = (-\frac{5}{6}) \cdot (-\frac{5}{6}) = \frac{25}{36}$

↓  
c

Aug 27-9:23 AM

$z^2 - 17z + c$

a.  $-17 \cdot \frac{1}{2} = -\frac{17}{2}$

b.  $(-\frac{17}{2})^2 = \frac{289}{4}$

↓  
c

Aug 27-9:27 AM

$a^2 + 2a - 3 = 0$

\*  $\rightarrow$  not Perfect!

Completing the Square (steps)

①  $a^2 + 2a - 3 = 0$

②  $a^2 + 2a = 3$

a.  $2 \cdot \frac{1}{2} = 1$

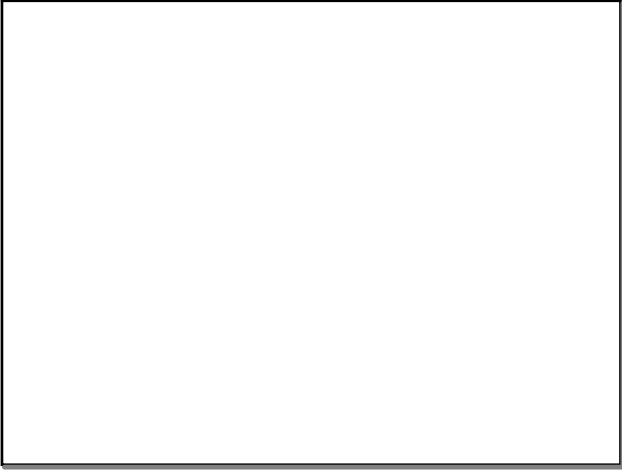
b.  $(1)^2 = 1$  add it to both sides of the equation.

③  $a^2 + 2a + 1 = 3 + 1$   
a Perfect Square Trinomial

④  $a^2 + 2a + 1 = 4$   
 $(a+1)^2 = 4$

$(a+1)^2 - 4 = 0$

Aug 27-9:30 AM



Aug 27-9:44 AM