10.4A

Tuesday, April 08, 2014
3:15 PM

ACT Week Live!

9. a
10. h
11. d
12. j
13. b
14. g
15. c
16. h

Solving Quadratic Equations!

Warm-up! Solve for x:

① $2x^2 - 8 = 0$ ② $x^2 - 18 = -18$ ③ $x^2 + 4 = 0$

we can solve quadratics by factoring. BUT! what happens when you can't factor??

Solve using square roots!

① $2x^2 - 8 = 0$
$+8 \quad +8$

② $x^2 - 18 = -18$
$+18 \quad +18$

③ $x^2 + 4 = 0$
$-4 \quad -4$

① $2x^2 - 8 = 0$

$+8 \quad +8$

$\frac{2x^2}{2} = \frac{8}{2}$

$\sqrt{x^2} = \sqrt{4}$

$\boxed{x = \pm 2}$

② $x^2 - 18 = -18$

$+18 \quad +18$

$\sqrt{x^2} = \sqrt{0}$

$\boxed{x = 0}$

③ $x^2 + 4 = 0$

$-4 \quad -4$

$\sqrt{x^2} = \sqrt{-4}$

$x = \emptyset$

no solution

④ $\frac{4z^2}{4} = \frac{9}{4}$

$\sqrt{z^2} = \sqrt{\frac{9}{4}}$

$z = \frac{\sqrt{9}}{\sqrt{4}} = \boxed{\pm \frac{3}{2}}$

⑤ $3x^2 - 11 = 7$

$+11 \quad +11$

$\frac{3x^2}{3} = \frac{18}{3}$

$\sqrt{x^2} = \sqrt{6}$

$x = \boxed{\pm\sqrt{6}}$

⑥ $\frac{25x^2}{25} = \frac{16}{25}$

$\sqrt{x^2} = \sqrt{\frac{16}{25}}$

$x = \frac{\sqrt{16}}{\sqrt{25}} = \boxed{\pm \frac{4}{5}}$

when you don't have rational solutions...

use your calculator!

① $x^2 + 4 = 14$

$-4 \quad -4$

$\sqrt{x^2} = \sqrt{10}$

$x = \pm\sqrt{10}$

$x \approx \boxed{\pm 3.16}$

② $3x^2 - 1 = 0$

$+1 \quad +1$

$\frac{3x^2}{3} = \frac{1}{3}$

$\sqrt{x^2} = \sqrt{\frac{1}{3}}$

$x = \pm\sqrt{\frac{1}{3}}$

$x \approx \boxed{\pm .58}$

③ $2p^2 - 7 = 2$

$+7 \quad +7$

$\frac{2p^2}{2} = \frac{9}{2}$

$\sqrt{p^2} = \sqrt{\frac{9}{2}}$

$p \approx \boxed{\pm 2.12}$