

Q3 - Homework 7 - Worksheet10-3

Date _____ Period _____

Solve each equation by completing the square.

Find EXACT answers AND to nearest tenth.

1) $m^2 - 6m - 3 = 5$

2) $v^2 - 4v + 6 = 3$

3) $m^2 + 2m - 11 = 4$

4) $n^2 + 4n - 7 = 5$

5) $3p^2 + 6p - 20 = 4$

6) $4k^2 + 8k - 9 = -4$

7) $2r^2 - 4r - 15 = 5$

8) $5v^2 + 10v - 20 = -5$

9) $2x^2 + 6x + 3 = 2$

10) $3r^2 + 3r - 9 = -2$

EX

$$\frac{2x^2}{2} - \frac{5x}{2} = \frac{1}{2}$$

$$x^2 - \frac{5}{2}x + \text{cloud} = \frac{1}{4} + \text{cloud}$$

$$x^2 - \frac{5}{2}x + \frac{25}{4} = \frac{1}{4} + \frac{25}{4}$$

$$\left(x - \frac{5}{2}\right)^2 = \frac{64}{4} + \frac{25}{4} = \frac{89}{4}$$

$$\sqrt{\left(x - \frac{5}{2}\right)^2} = \pm \sqrt{\frac{89}{4}}$$

$$x - \frac{5}{2} = \pm \sqrt{\frac{89}{4}}$$

$$x = \frac{5}{2} \pm \sqrt{\frac{89}{4}}$$

EXACT

Find missing term to
"complete the square"
 $\Rightarrow \left(\frac{1}{2} \cdot 5\right)^2 \Rightarrow \left(\frac{1}{2} \cdot \frac{5}{2}\right)^2 = \left(\frac{5}{4}\right)^2$
 $= \frac{25}{16}$

TO NEAREST TENTH

$$\begin{aligned} x &= \frac{5}{2} + \sqrt{\frac{89}{4}} & \left\{ \begin{aligned} x &= \frac{5}{2} - \sqrt{\frac{89}{4}} \\ x &= .31 + .59 & \left\{ \begin{aligned} x &= .31 - .59 \\ x &= .9 & \text{AND } x = -0.3 \end{aligned} \right. \end{aligned} \right. \end{aligned}$$