

11.3 PRACTICE SOLUTIONS

Solve the equation.		
<p>1. $3x^2 - 3 = 0$</p> $\begin{array}{r} +3 \quad +3 \\ \hline 3x^2 = 3 \\ \hline \frac{3x^2}{3} = \frac{3}{3} \\ \hline x^2 = 1 \\ \hline x = 1 \text{ or } -1 \\ x = \pm 1 \end{array}$	<p>2. $4x^2 - 400 = 0$</p> $\begin{array}{r} +400 \quad +400 \\ \hline 4x^2 = 400 \\ \hline \frac{4x^2}{4} = \frac{400}{4} \\ \hline x^2 = 100 \\ \hline x = 10 \text{ or } -10 \\ x = \pm 10 \end{array}$	<p>3. $15d^2 = 0$</p> $\begin{array}{r} \frac{15d^2}{15} = \frac{0}{15} \\ \hline d^2 = 0 \end{array}$ <p style="text-align: right; margin-right: 20px;">doesn't exist ↓</p> <p style="text-align: center;">$d = 0 \text{ or } -0$</p> <p style="text-align: center; border: 1px solid black; border-radius: 50%; padding: 5px;">$d = 0$</p>
<p>4. $4g^2 + 10 = 11$</p> $\begin{array}{r} -10 \quad -10 \\ \hline 4g^2 = 1 \\ \hline \frac{4g^2}{4} = \frac{1}{4} \\ \hline g^2 = \frac{1}{4} \\ \hline g = \frac{1}{2} \text{ or } -\frac{1}{2} \\ g = \pm \frac{1}{2} \end{array}$	<p>5. $9q^2 - 35 = 14$</p> $\begin{array}{r} +35 \quad +35 \\ \hline 9q^2 = 49 \end{array}$ <p style="text-align: right; margin-right: 20px;">ok $q = 2.\bar{3} \text{ or } -2.\bar{3}$ $\pm 2.\bar{3}$</p> $\begin{array}{r} \frac{9q^2}{9} = \frac{49}{9} \\ \hline q^2 = \frac{49}{9} \\ \hline q = \frac{7}{3} \text{ or } -\frac{7}{3} \\ q = \pm \frac{7}{3} \end{array}$	<p>6. $3z^2 - 18 = -18$</p> $\begin{array}{r} +18 \quad +18 \\ \hline 3z^2 = 0 \\ \hline \frac{3z^2}{3} = \frac{0}{3} \\ \hline z^2 = 0 \\ \hline z = 0 \end{array}$

Multiple Choice

7. Which of the following is a solution of the equation $61 - 3n^2 = -14$?

A. 5

B. 10

C. 25

D. 625

$$\begin{array}{r} 61 - 3n^2 = -14 \\ -61 \quad -61 \\ \hline -3n^2 = -75 \\ \hline \frac{-3n^2}{-3} = \frac{-75}{-3} \\ \hline n^2 = 25 \end{array}$$

$$\begin{array}{r} \sqrt{n^2} = \sqrt{25} \\ \hline n = 5 \text{ or } -5 \end{array}$$

Solve the equation. Give the exact answer and approximate rounded to the nearest hundredth.

8. $x^2 + 6 = 13$

$$\begin{array}{r} -6 \quad -6 \\ \hline x^2 = 7 \\ \hline x = \pm \sqrt{7} \\ x = \sqrt{7} \text{ or } -\sqrt{7} \\ 2.65 \quad -2.65 \end{array}$$

9. $14 - x^2 = 17$

$$\begin{array}{r} -14 \quad -14 \\ \hline -x^2 = 3 \\ \hline \frac{-x^2}{-1} = \frac{3}{-1} \\ \hline x^2 = -3 \end{array}$$

NO SOLUTION

Can't square root a negative

10. $4 - k^2 = 4$

$$\begin{array}{r} -4 \quad -4 \\ \hline -k^2 = 0 \\ \hline \frac{-k^2}{-1} = \frac{0}{-1} \\ \hline k^2 = 0 \\ \hline k = 0 \end{array}$$

11. $53 = 8 + 9m^2$

$$\begin{array}{r} -8 \quad -8 \\ \hline 45 = 9m^2 \\ \hline \frac{45}{9} = \frac{9m^2}{9} \\ \hline 5 = m^2 \\ \hline \pm \sqrt{5} = m \\ \sqrt{5} \text{ or } -\sqrt{5} = m \end{array}$$

2.24 -2.24

12. $7c^2 = 100$

$$\begin{array}{r} \frac{7c^2}{7} = \frac{100}{7} \\ \hline c^2 = \frac{100}{7} \\ \hline c = \pm \sqrt{\frac{100}{7}} \\ c = \sqrt{\frac{100}{7}} \text{ or } -\sqrt{\frac{100}{7}} \\ 3.78 \quad -3.78 \end{array}$$

13. $4b^2 - 5 = 2$

$$\begin{array}{r} +5 \quad +5 \\ \hline 4b^2 = 7 \\ \hline \frac{4b^2}{4} = \frac{7}{4} \\ \hline b^2 = \frac{7}{4} \\ \hline b = \pm \sqrt{\frac{7}{4}} \\ b = \sqrt{\frac{7}{4}} \text{ or } -\sqrt{\frac{7}{4}} \\ 1.32 \quad -1.32 \end{array}$$