Lesson 7 Practice Problems

1. Noah solved the equation $5x^2 = 45$. Here are his steps:

$$5x^2 = 45$$
$$x^2 = 9$$
$$x = 3$$

Do you agree with Noah? Explain your reasoning.

2. Find the solution(s) to each equation, or explain why there is no solution.

   a. $\sqrt{x + 4} + 7 = 5$

   b. $\sqrt{47 - x} - 2 = 4$

   c. $\frac{1}{2}\sqrt{20 + x} = 5$

3. Which is a solution to the equation $\sqrt{5 - x} + 13 = 4$?

A. 86

B. 81

C. 9

D. The equation has no solution.

4. Select **all** expressions that are equal to $\frac{1}{(\sqrt{2})^5}$.

   A. $-\dfrac{5}{\sqrt{2}}$

   B. $\dfrac{1}{\sqrt{2^5}}$

   C. $\dfrac{1}{\sqrt{32}}$

   D. $-(\sqrt{2})^5$

   E. $-2^{\frac{5}{2}}$

   F. $2^{-\frac{5}{2}}$
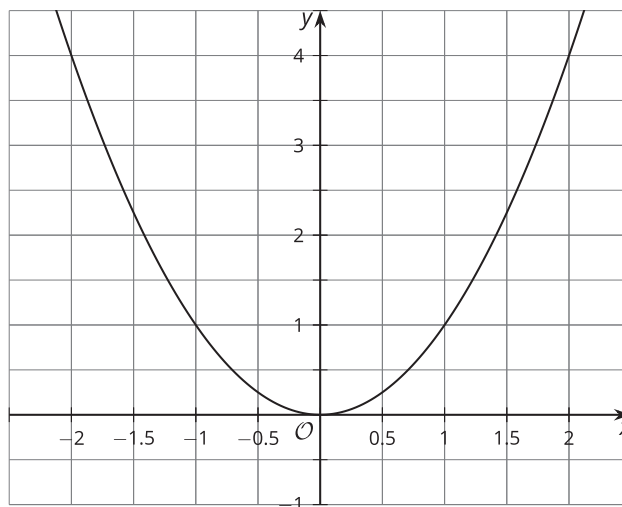
(From Unit 3, Lesson 5.)

5. Which are the solutions to the equation $x^2 = 36$?

   A. 6 only

   B. -6 only

   C. 6 and -6

   D. This equation has no solutions.

(From Unit 3, Lesson 6.)

6. Here is a graph of $y = x^2$.

    a. Use the graph to estimate all solutions to the equation $x^2 = 3$.

    b. If you square your estimates, what number should they be close to?

    c. Square your estimates. How close did you get to this number?

(From Unit 3, Lesson 6.)

7. The polynomial function $q(x) = 3x^3 + 11x^2 - 14x - 40$ has a known factor of $(3x + 5)$. Rewrite $q(x)$ as the product of linear factors.

(From Unit 2, Lesson 12.)