Lesson 1 Practice Problems
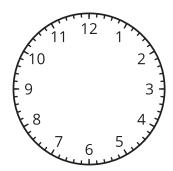
1. Here is a clock face. For each time given, name the number the second hand points at.
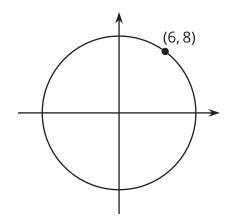
    a. 15 seconds after 1:00.

    b. 30 seconds after 1:00.

    c. 1 minute after 1:00.

    d. 5 minutes after 1:00.

2. At 12:15, the end of the minute hand of a clock is 8 feet above the ground. At 12:30, it is 6.5 feet off the ground.

    a. How long is the minute hand of the clock? Explain how you know.

    b. How high is the clock above the ground?

3. Here is a point on a circle centered at $(0, 0)$.

    Which equation defines the circle?

    A. $x + y = 10$

    B. $x^2 + y^2 = 10$

    C. $x^2 + y^2 = 100$

    D. $(x - 6)^2 + (y - 8)^2 = 100$

4. The point $(3, 4)$ is on a circle centered at $(0, 0)$. Which of these points lie on the circle? Select **all** that apply.

    A. (-3, -4)

    B. $(4, 3)$

    C. $(0, 5)$

    D. $(0, 0)$

    E. (-5, 0)

5. Match each polynomial with its end behavior as x gets larger and larger in the positive and negative directions. (Note: some of the answer choices are not used and some answer choices may be used more than once.)

A. $f(x) = \dfrac{6}{x - 6}$

B. $g(x) = \dfrac{3x}{x - 6}$

C. $h(x) = \dfrac{3x - 18}{x - 6}$

D. $k(x) = \dfrac{3x^2 - 16x + 12}{x - 6}$

E. $m(x) = \dfrac{(x + 5)(x - 4)(x - 6)}{x - 6}$

1. The graph approaches $y = 6$.

2. The graph approaches $y = 3$.

3. The graph approaches $y = 0$.

4. The graph approaches $y = x^2 + x - 20$.

5. The graph approaches $y = 3x^2 + 16x - 12$.

6. The graph approaches $y = 3x + 2$.

7. The graph approaches $y = x - 3$.

(From Unit 2, Lesson 19.)

6. Find the solution(s) to each equation.

a. $x^2 - 6x + 8 = 0$

b. $x^2 - 6x + 9 = 0$

c. $x^2 - 6x + 10 = 0$

(From Unit 3, Lesson 18.)