AMI Lesson 1 Cumulative Practice Problems

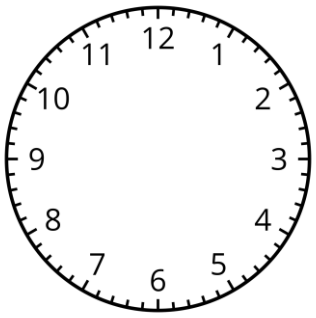
1. Here is a clock face. For each time given, name the number the second hand points at.

   a. 15 seconds after 1:00.

   b. 30 seconds after 1:00.

   c. 1 minute after 1:00.

   d. 5 minutes after 1:00.



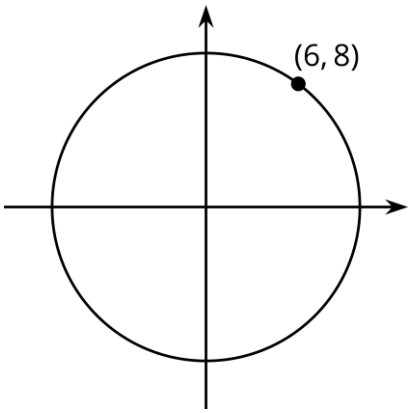
2. At 12:15, the end of the minute hand of a clock is 8 feet above the ground. At 12:30, it is 6.5 feet off the ground.

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

   b. $g(x) = \frac{3x}{x-6}$

   c. $h(x) = \frac{3x-18}{x-6}$

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

   e. $m(x) = \frac{(x+5)(x-4)(x-6)}{x-6}$

   a. The graph approaches $y = 6$.

   b. The graph approaches $y = 3$.

   c. The graph approaches $y = 0$.

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

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

   f. The graph approaches $y = 3x - 2$.

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

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

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

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

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