Lesson 5 Practice Problems

1. Match each quadratic expression with an equivalent expression in factored form.

A. $x^2 + 6x$	1. $(x + 7)(x - 1)$
B. $x^2 + 6x + 5$	2. $(x + 5)(x + 1)$
C. $x^2 + 6x - 7$	3. $(x + 4)(x + 2)$
D. $x^2 + 6x + 8$	4. $(x + 3)(x + 3)$
E. $x^2 + 6x + 9$	5. $x(x + 6)$

2. An equation of a circle is $x^2 - 8x + 16 + y^2 + 10y + 25 = 81$.

   a. What is the radius of the circle?

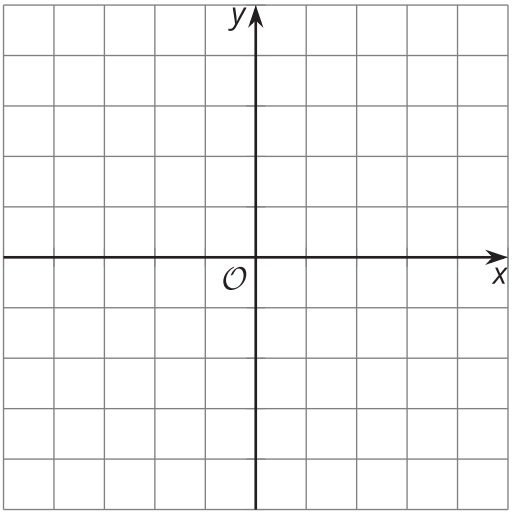
   b. What is the center of the circle?

3. Write 3 perfect square trinomials. Then rewrite them as squared binomials.

4. Write an equation of the circle that has a diameter with endpoints $(12, 3)$ and $(-18, 3)$.

(From Unit 6, Lesson 4.)

5. a. Graph the circle $(x-2)^2+(y-1)^2=25$.



b. For each point, determine if it is on the circle. If not, decide whether it is inside the circle or outside of the circle.

i. $(4, 0)$

ii. $(-3, 3)$

iii. $(-2, -2)$

c. How can you use distance calculations to decide if a point is inside, on, or outside a circle?

(From Unit 6, Lesson 4.)

6. The triangle whose vertices are $(2, 5)$, $(3, 1)$, and $(4, 2)$ is transformed by the rule $(x, y) \rightarrow (x-2, y+4)$. Is the image similar or congruent to the original figure?

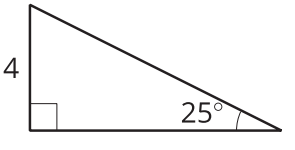
A. The image is congruent to the original triangle.

B. The image is similar but not congruent to the original triangle.

C. The image is neither similar nor congruent to the original triangle.

(From Unit 6, Lesson 3.)

7. *Technology required.* A triangular prism has height 6 units. The base of the prism is shown in the image. What is the volume of the prism? Round your answer to the nearest tenth.



(From Unit 5, Lesson 15.)