

Name _____

11-4B Lesson Master

Questions on SPUR Objectives
See Student Edition pages 792–795 for objectives.

SKILLS Objective C

In 1 and 2, find the exact zeros of the polynomial function with the given equation.

1. $A(x) = x(x - 3)(x + 4)(2x - 1)$ _____

2. $f(x) = (x + 1)(x - 3)(3x + 2)$ _____

In 3–5, a. factor the polynomial and b. find the exact zeros of the polynomial function.

3. $h(a) = 4a^3 - 4a$
 a. factored: _____ b. zeros: _____

4. $d(x) = 18x^3 + 57x^2 - 21x$
 a. factored: _____ b. zeros: _____

5. $f(x) = x^3 + 5x^2 - 2x - 24$
 a. factored: _____ b. zeros: _____

PROPERTIES Objective F

6. **True or False** The graph of a polynomial function P has an x -intercept at $(-1, 0)$. Determine whether each statement is true or false.

- a. $P(-1) = 0$. _____ b. $(x + 1)$ is a factor of $P(x)$. _____
 c. -1 is a root of $P(x)$. _____ d. -1 is a solution to $P(x) = 0$. _____

7. The only zeros of a polynomial function f are $-8, 2,$ and 3 .

- a. **Fill in the Blank** The degree of the polynomial must be at least _____.
 b. Write a possible third-degree equation for f . _____
 c. Write a possible fifth-degree equation for f . _____
 d. Write the general form of the equation for f . _____

8. Find all values of a such that $(x + 2)$ is a factor of

- a. $ax^2 + 6x$. _____ b. $x^2 + x - a$. _____
 c. $3x^2 + ax - 2$. _____ d. $6x^3 + ax^2 + 11x - 6$. _____

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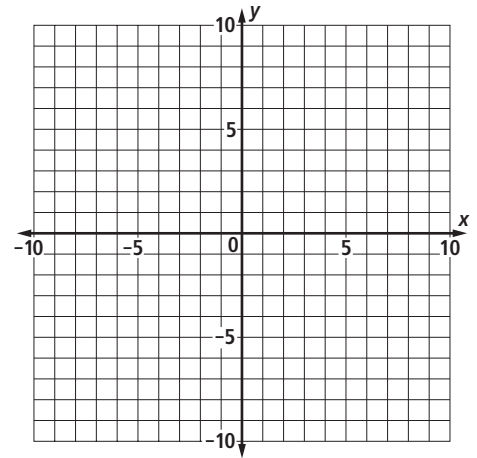
REPRESENTATIONS Objectives J, K

9. Let $h(x) = x^3 - 2x^2 - 3x$.

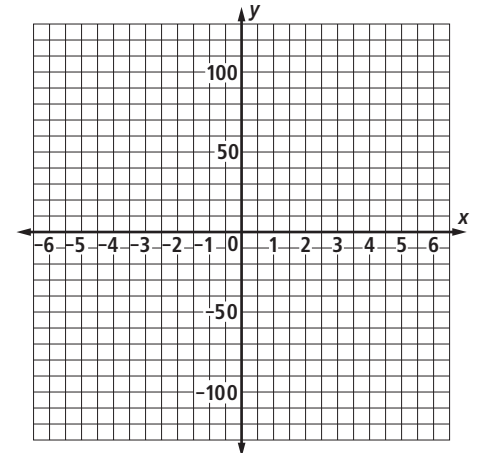
- a. Use a graphing utility to find the x -intercepts, and sketch the graph of h at the right.

- b. Solve $h(x) = 0$.

- c. Use the results of Parts a and b to factor $h(x)$. $h(x) =$ _____



10. Suppose $p(x)$ is a third-degree polynomial whose roots are 0, 5, and $-\frac{6}{5}$. Sketch a possible graph for p at the right.

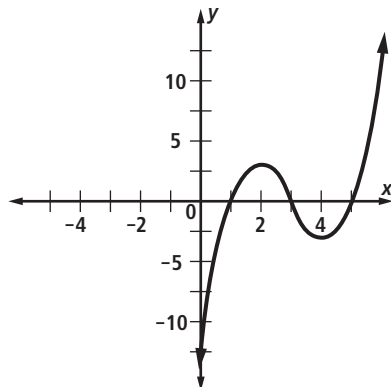


In 11 and 12, a polynomial function of the given degree with integer zeros and leading coefficient 1 is graphed below each question. Use the graph to write an equation for the polynomial function a. in factored form, and b. in standard form.

11. degree 3

a. _____

b. _____



12. degree 4

a. _____

b. _____

