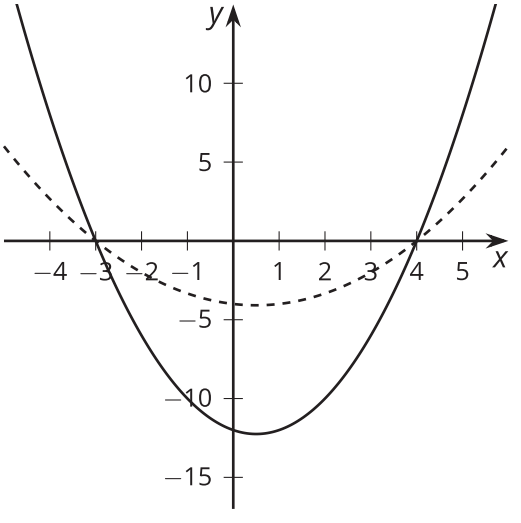
Lesson 6 Practice Problems

1. $f(x) = (x + 3)(x - 4)$ and $g(x) = \frac{1}{3}(x + 3)(x - 4)$. The graphs of each are shown here.



   a. Which graph represents which polynomial function? Explain how you know.

2. For each polynomial function, rewrite the polynomial in standard form. Then state its degree and constant term.

   a. $f(x) = (x + 1)(x + 3)(x - 4)$

   b. $g(x) = 3(x + 1)(x + 3)(x - 4)$

3. Tyler incorrectly says that the constant term of $(x+4)(x-4)$ is zero.

   a. What is the correct constant term?

   b. What is Tyler's mistake? Explain your reasoning.

4. Which of these standard form equations is equivalent to $(x+1)(x-2)(x+4)(3x+7)$?

   A. $x^4 + 10x^3 + 15x^2 - 50x - 56$

   B. $x^4 + 10x^3 + 15x^2 - 50x + 56$

   C. $3x^4 + 16x^3 + 3x^2 - 66x - 56$

   D. $3x^4 + 16x^3 + 3x^2 - 66x + 56$

5. Select **all** polynomial expressions that are equivalent to $5x^3 + 7x - 4x^2 + 5$.

   A. $13x^5$

   B. $5x^3 - 4x^2 + 7x + 5$

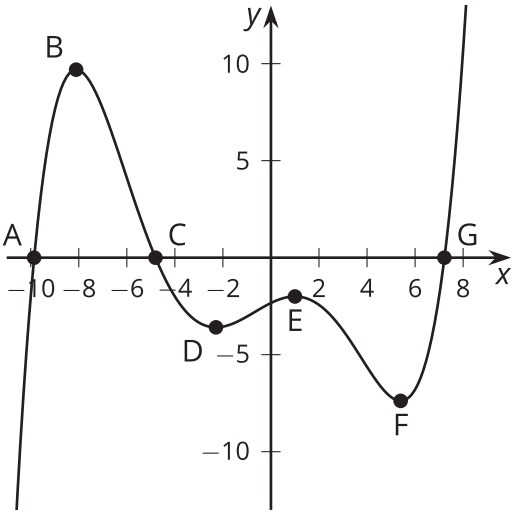
   C. $5x^3 + 4x \cdot 2 + 7x + 5$

   D. $5 + 4x - 7x^2 + 5x^3$

   E. $5 + 7x - 4x^2 + 5x^3$

(From Unit 2, Lesson 2.)

6. Select **all** the points which are relative minimums of this graph of a polynomial function.



A. Point A

B. Point B

C. Point C

D. Point D

E. Point E

F. Point F

G. Point G

(From Unit 2, Lesson 3.)

7. What are the x-intercepts of the graph of $y = (3x + 8)(5x - 3)(x - 1)$?

(From Unit 2, Lesson 5.)