Lesson 5 Practice Problems

1. What is the value of
$$4(x-2)(x-3)+7(x-2)(x-5)-6(x-3)(x-5)$$
when $x = 5$?

2. Which polynomial function has zeros when $x = -2, \frac{3}{4}, 5$?

   A. $f(x) = (x-2)(3x+4)(x+5)$

   B. $f(x) = (x-2)(4x+3)(x+5)$

   C. $f(x) = (x+2)(3x-4)(x+5)$

   D. $f(x) = (x+2)(4x-3)(x-5)$

3. The graph of a polynomial $f(x) = (2x-3)(x-4)(x+3)$ has x-intercepts at 3 x values. What are they?

4. Match each sequence with one of the recursive definitions. Note that only the part of the definition showing the relationship between the current term and the previous term is given so as not to give away the solutions. One of the sequences matches two recursive definitions.

   A. $a(n) = a(n-1) - 4$

   B. $b(n) = b(n-1) + 0$

   C. $c(n) = -\frac{1}{2} \cdot c(n-1)$

   D. $d(n) = 1 \cdot d(n-1)$

   1. 7, 3, -1, -5

   2. $1, -\frac{1}{2}, \frac{1}{4}, -\frac{1}{8}$

   3. 8, 8, 8, 8

(From Unit 1, Lesson 5.)

5. Han is multiplying $10x^4$ by $0.5x^3$ and gets $5x^7$. He says that $0.5x^3$ is not a polynomial because 0.5 is not an integer. What is the error in Han's thinking? Explain your reasoning.

(From Unit 2, Lesson 4.)

6. Here are two expressions whose sum is a new expression, A.

$(2x^2 + 5) + (6x^{\square} - 7) = A$

Select **all** the values that we can put in the box so that A is a polynomial.

A. -2

B. -1

C. -0.5

D. 0

E. 0.5

F. 1

G. 2

(From Unit 2, Lesson 4.)