BECA / Huson / Algebra 2: Polynomials First and last name:
22 October 2024 Section:

2.21 Homework: Polynomials exam review

1. Which expression is equivalent to $2(5x-2)(x+1)(x-3)$?

   (a) $5x^3-24x^2-22x-12$

   (b) $10x^3-24x^2-22x+6$

   (c) $2x^3-24x^2-22x+12$

   (d) $10x^3-24x^2-22x+12$

2. The polynomial p is a function of x. The graph of p has three zeros at 7, $\frac{2}{3}$, and -1. Select **all** the expressions that could represent p.

   (a) $(x-7)(x-\frac{2}{3})(x+1)$

   (b) $(x-7)(3x-2)(x-1)$

   (c) $3(x-7)(x-\frac{2}{3})(x+1)$

   (d) $3x(x+7)(x+\frac{2}{3})(x-1)^2$

   (e) $(x-7)(x+\frac{2}{3})(x-1)$

   (f) $(x-7)(3x-2)(x+1)$

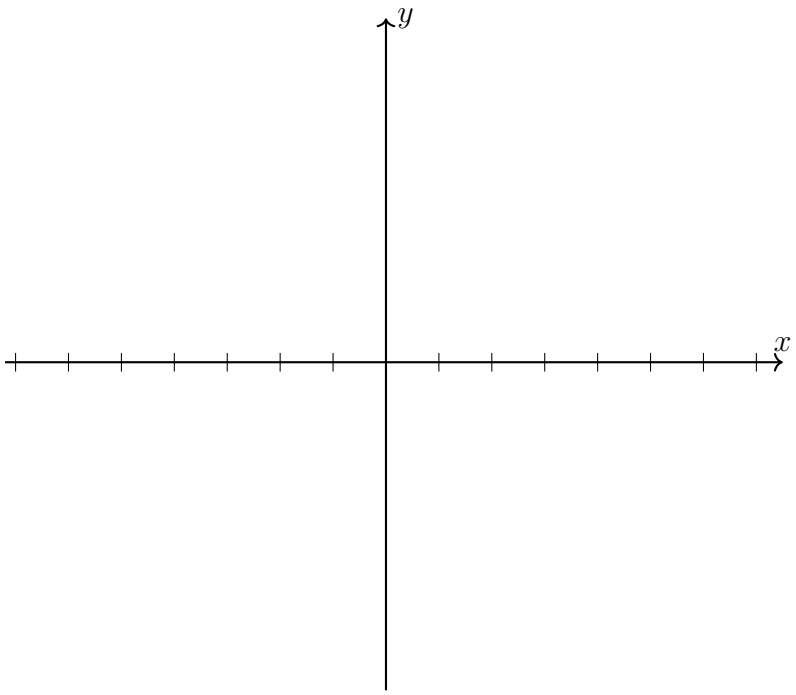
   (g) $3(x-7)(x-\frac{2}{3})(x-1)$

   (h) $3x(x+7)(x-\frac{2}{3})(x+1)^2$

3. Let f be a polynomial function of x where $f(x)=4x^3-11x^2-6x+9$. If $x-3$ is a factor of f, write an equation for f as a product of linear factors.

4. Let P be a polynomial function of x, and $P(x) = x^3 + dx^2 - 5x + 6$. If $x - 1$ is a factor of P, what is the value of d? Explain or show how you know.

5. Let $j(x) = -x(x + 4)(x - 3)^2$ be a polynomial function.



   (a) Sketch a graph of the function.

   (b) Name all horizontal and vertical intercepts of the graph.

   (c) State the end behavior of j.