2.18 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)
$$(x-7)(x-\frac{2}{3})(x+1)$$

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

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

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

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

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

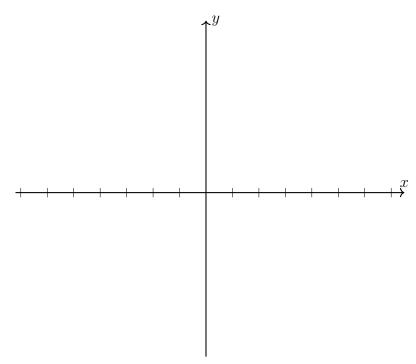
(d)
$$3x(x+7)(x+\frac{2}{3})(x-1)^2$$

(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.