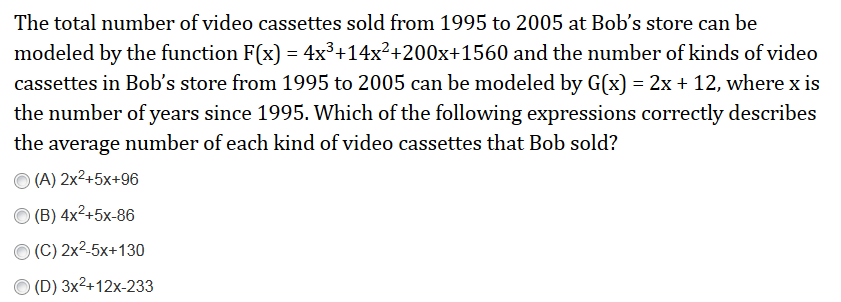
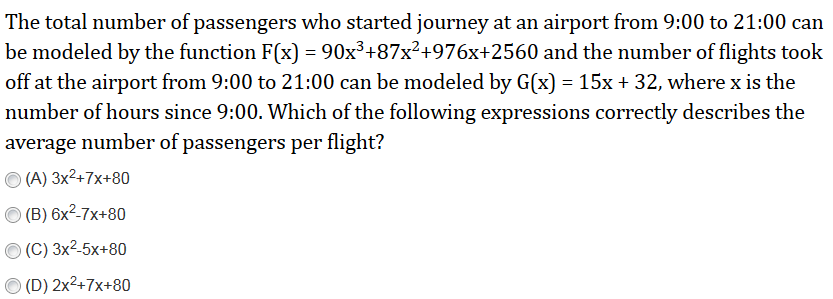
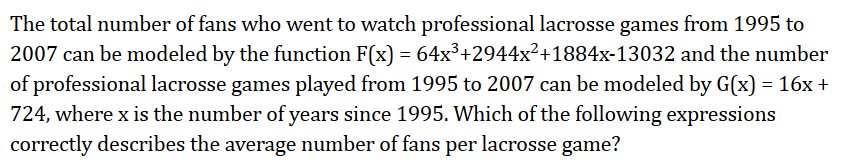
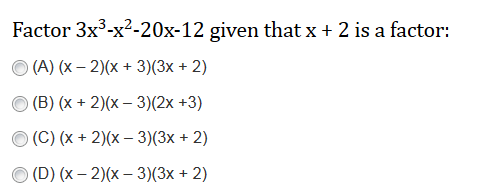
Applications of Polynomial Long Division Worksheet: Use polynomial long division and the definition of a factor to solve the following problems. Show all steps!

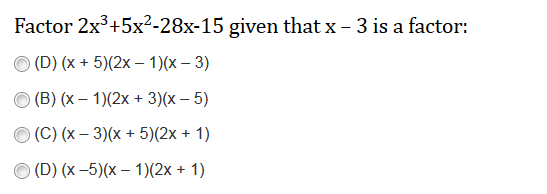
1.

2. 

3.



4.

5.

6. The volume of a rectangular box is 12x3 – 19x2 – 13x + 6. Given the height of the box is (x – 2), find a polynomial expression for the length and width.

7. An aquarium whose volume is V = 10x3 + 43x2 – 47x – 60 cubic inches has a width of (x + 5) inches. Find a polynomial expression for the length and width of the aquarium.

8. The volume of a carton is given to be V = 6x3-35x2-41x+210. If the height of the carton is given to be x – 6, what is the area of the rectangular base of the carton?

9. Find a value for c that makes (x + 5) a factor of the polynomial 10x3+43x2-47x + c .