PreCalc 11 Chapter 6 Assignment – hand in for completion marks

Name: _____

Complete the following questions showing all work and steps where applicable.

1. Simplify the rational expressions. State the non-permissible values (restrictions) for each.

a) $\dfrac{x^2 - 8x + 15}{2x^2 - 9x - 5}$

b) $\dfrac{18 - 2x^2}{x^2 + 6x + 9}$

2. Simplify the rational expressions. State the non-permissible values (restrictions) for each:

a) $\dfrac{x+2}{x^2 - 2x - 15} \bullet \dfrac{x-5}{2x+4}$

b) $\dfrac{2x^2 + 15x + 7}{x^2 - 5x - 14} \div \dfrac{12x + 6}{x^2 - 4}$

3. Simplify the rational expressions. State the non-permissible values (restrictions) for each:

a) $\dfrac{2t+3}{6t}+4-\dfrac{t+1}{t^2}$

b) $\dfrac{8}{x^2-2x-3}-\dfrac{x-1}{x-3}$

4. Solve the following rational equations
- list the non-permissible values (restrictions)
- identify any extraneous roots

a) $\dfrac{x+1}{x^2+2x-3}=\dfrac{2}{x-1}$

b) $\dfrac{2x+1}{x-1}-\dfrac{3x}{x+2}=\dfrac{18}{x^2+x-2}$

For each question below, write an equation to model the situation, then solve it.

5. A boat travels 45 km downstream in the same amount of time that it takes to travel 30 km upstream. If the speed of the boat in still water is 12 km/h, find the speed of the current.

6. John can paint a shed in 5 hours. When he and his sister Meg work together, they can paint the same shed in 2 hours. How long will it take Meg to paint the shed if she works alone?

7. How many grams of almonds should be added to 690 grams of walnuts to make a nut mixture that is 70% almonds?