***Pre-Calculus 11***

***Unit 7: Rational Expressions and Equations***

***Worksheet 7.1—Equivalent Rational Expressions***

1. State whether each expression is a rational expression. If the expression is not rational,

explain why.

1. b) c)

d) e) f)

2. Identify the non-permissible values for the variables in each rational expression.

1. b) c)

d) e) f)

g) h) i)

j) k) l)

m) n) o)

3. Simplify each rational expression.

a) b) c)

d) e) f)

4. Simplify each rational expression.

1. b) c)

d) e) f)

5. Simplify each rational expression.

1. b) c)

d) e) f)

6. Simplify each rational expression.

1. b) c)
2. e) f)

7. Simplify each rational expression.

1. b) c)

d) e) f)

8. Give and example of a rational expression that has the following characteristic:

a) Has non-permissible values 3 and .

b) Has non-permissible values and .

c) Is defined for all real values of *x*.

9. Two points on a coordinate grid are represented by and .

a) Write a rational expression for the slope of a line passing through A and B.

Write your answer in simplest form.

b) Determine a value for p such that the line passing though A and B has a negative slope.

c) Describe the line through A and B for any non-permissible value of p.

10. Write in simplest form

a) b)

c) d)

***Solutions***

1. a) Rational

b) Rational

c) Rational

d) Not Rational not a polynomial

e) Rational

f) Not Rational not a polynomial

2. a) b) c) d)

e) f) g) h)

i) j) k) l) ,

m) n) o)

3. a) b) c) d) e) f)

4. a) b) c) d) e) f)

5. a) b) c) d) e) f)

6. a) b) c) d) e) f)

7. a) b) c)

d) e) f)

8. a) b) c) Any denominator that can never equal zero.

9. a)

1. Any value will give a negative slope. Example if ,
2. If , then the expression is undefined, and the line is vertical.

10. a) b)

c) d)