**Colorado Technical University**

 **Course:** MATH116 – Foundations for Calculus

**Unit 5 Part 10 Readings: Absolute Value Equations, Radical Equations,**

**Inequalities, Interval Notation**

**Absolute Value Equations**

**Solving absolute value equations:**

Isolate the absolute value expression

Set the quantity inside the absolute value notation equal to + and

- the quantity on the other side of the equation

Solve for the unknown in both equations

Check your answer analytically or graphically

**Radical equations**

 Contain a root

When solving radical equation, isolate one radical on one side of the equation

Raise both sides to the nth power in order to remove the nth root

 Rationalizing the denominator

**Inequalities**

 Addition:

if a < b, then a + c < b + c;

Subtraction:

if a < b, then a – c < b – c

Positive multiplication:

if a < b and c > 0, then ac < bc

Negative multiplication:

if a < b and c < 0, then ac > bc

Negative division:

 if a < b and c < 0, then $\frac{a}{c}>\frac{b}{c}$

# Interval Notation

When there are two inequalities hemming in the function

Several ways to express these:

x<1, x≥2 inequality notation

(–∞ ,1) ∪ [2,∞) interval, or set, notation

parentheses are used when the point is not included (open intervals)

square brackets are used when the point is included (closed intervals)

[

2

)

1

 number line with parentheses/square brackets

2

1

number line with dots (closed dots are used when the point is

included (closed intervals), open dots are used when the

 point is not included (open intervals)

Each format is equally valid

