

# Topics for Exam 2

This exam will be 22 questions. Fifteen of those questions are 4-points and seven of the questions are 6-points.

## Piecewise Functions: 1.4 in Text

- Be able to evaluate a piecewise function
- Be able to interpret a piecewise function

## Function Arithmetic: 1.5 in Text

- Be able to evaluate using function arithmetic such as adding, subtracting, multiplying, and dividing functions
- Be able to know when two functions can be divided by each other

## Difference Quotient: 1.5 in Text

- Be able to find the difference quotient of a function

## Even/Odd: 1.6 in Text

- Be able to determine if a given function is even, odd, or neither

## Transformations: 1.7 in Text

- Determine horizontal shifts and direction
- Determine vertical shifts and direction
- Determine reflections and about  $x$  or  $y$  axis
- Determine horizontal and vertical stretching
- Given a point on  $f(x)$  determine a point on the shift  $g(x)$  of  $f(x)$

## Slope: 1.2 in Text

- Determine the slope of a line given two points
- Know the slope of a horizontal line
- Know the slope of a vertical line
- Find  $k$  in  $(x_1, k)$  and  $(x_2, y_2)$  given the slope of the line.
- Find the slope given an equation of a line
- Find the Average Rate of Change of a function between two points

## Equations of a Line

- Find the equation of a line in point-slope form
- Find the equation of a line in slope-intercept form
- Find the equation of a line in standard form
- Find the equation of a line in standard form or slope-intercept form from point-slope form
- Be able to write an equation for a horizontal line
- Be able to write an equation of a vertical line

## Parallel/Perpendicular: 2.1 in Text

- Determine if two lines are parallel, perpendicular, or neither
- Find an equation of a line parallel to a given line
- Find an equation of a line perpendicular to given line

## Absolute Value: 2.2 in Text

- Solve an absolute value equation of the form  $|ax + b| = c$
- Solve an absolute value equation of the form  $|ax + b| = |cx + d|$
- Solve an absolute value equation of the form  $|ax + b| = cx$

## Quadratics: 2.3 in Text

- Find the vertex of a parabola
- Find a maximum or minimum  $y$ -value of a parabola
- Find the equation of a parabola given the vertex and another point
- Determining the number of real roots of a quadratic equation
- Be able to use the Quadratic Formula
- Be able to state the Quadratic Formula

## Absolute Value Inequalities: 2.4 in Text

- Be able to solve an absolute value inequality
- Be able to find an absolute value inequality that satisfies a given interval