

Review Sheet for Test 2

The only new understood instruction on this test is that all graphs must have their axes labeled.

Following is a list of concepts you should know for the test:

- Section 1.8: (6 pts.) Convert an equation of a circle to standard form.
(5 pts.) Graph a circle from its equation.
- Section 2.2: (2 pts.) Determine the domain and range of a function from its graph.
(3 pts.) Determine if an equation is a function.
(10 pts.) Graph a piecewise function.
- Section 2.3: (2 pts.) Determine the intervals on which a function is increasing or decreasing from its graph.
(4 pts.) Determine if a function is even, odd, or neither.
(10 pts.) Determine the average rate of change of a function on an interval.
- Section 2.4: (20 pts.) Perform transformations on graphs.
- Section 2.5: (2 pts.) Determine relative extrema of a function from its graph.
- Section 2.6: (17 pts.) Solve word problems.
- Section 2.7: (6 pts.) Determine a composition of two functions and its domain.
- Section 2.8: (6 pts.) Determine the inverse of a one-to-one function from its equation.
- Section 3.1: (1 pt.) Determine degrees of polynomials.
(3 pts.) Determine if functions are polynomials.
(3 pts.) Determine the end behavior of a polynomial.

Formulas

Standard form of equation of a circle: The standard equation of a circle with center (h, k) and radius r is

$$(x - h)^2 + (y - k)^2 = r^2.$$

Average rate of change: The average rate of change of a function $f(x)$ from $x = a$ to $x = b$ is

$$\frac{f(b) - f(a)}{b - a}.$$

General form of equation of a parabola: The general equation of a parabola with vertex $\left(\frac{-b}{2a}, \frac{-(b^2 - 4ac)}{4a}\right)$ is

$$y = ax^2 + bx + c.$$

Standard form of equation of a parabola: The standard equation of a parabola with vertex (h, k) is

$$y = a(x - h)^2 + k.$$

Revenue: The revenue that a company obtains from selling a product is the number of products sold times the price of the product.

Profit: The profit that a company makes is revenue minus cost.