

### Review Sheet for Graphing Portion of Final

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| <u>Section 1.8:</u>          | (8 pts.)  | Graph a circle.  |
| <u>Section 1.10:</u>         | (6 pts.)  | Determine the equation of a line passing through a point and either parallel or perpendicular to a given line. |
|                              | (4 pts.)  | Graph lines.   |
| <u>Section 2.4:</u>          | (16 pts.) | Graph a function using transformations.  |
| <u>Section 2.5:</u>          | (14 pts.) | Graph a parabola using vertex and intercepts technique.  |
| <u>Section 3.1:</u>          | (11 pts.) | Graph a polynomial function.   |
| <u>Section 3.6:</u>          | (14 pts.) | Graph a rational function.   |
| <u>Sections 4.1 and 4.2:</u> | (8 pts.)  | Graph an exponential and/or a logarithmic function.  |
| <u>Section 5.3:</u>          | (14 pts.) | Graph a trigonometric function.  |
| <u>Section 8.3:</u>          | (5 pts.)  | Graph complex numbers.   |

#### Formulas

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

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

Slope-intercept form of equation of line: An equation for a line with slope  $m$  and  $y$  intercept  $(0, b)$  is

$$y = mx + b.$$

Point-slope form of equation of line: An equation for a line with slope  $m$  that passes through  $(x_1, y_1)$  is

$$y - y_1 = m(x - x_1).$$

General form of equation of parabola: An equation for 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 parabola: An equation for a parabola with vertex  $(h, k)$  is

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

Information about trigonometric functions: In both of the following equations

$$\begin{aligned}y &= a \sin[b(x - c)] + d \\y &= a \cos[b(x - c)] + d\end{aligned}$$

where  $a \neq 0$  and  $b > 0$ , the central axis is  $y = d$ , the amplitude is  $|a|$ , the period is  $\frac{2\pi}{b}$ , and a "typical period" is  $\left[c, c + \frac{2\pi}{b}\right)$ .