

## MATH 211 Skills Review: Equations and graphing of lines

You are expected to be able to

- determine the slope of a nonvertical line, given any two points on the line, or given any equation for the line;
- find the slope-intercept ( $y = mx + b$ ) form of the equation of a nonvertical line, given two points on the line, or one point and the slope of the line;
- find the  $x$ - and  $y$ -intercepts of any line, given an equation for it;
- graph any line, given an equation for it, or sufficient data to determine its equation (e.g. two points on it, or one point and its slope).

In Section 2.2 and 2.3, you will only need to be able to graph a nonvertical line, given its equation. The rest of the skills will come into heavy use beginning in Section 2.4.

### EXERCISES:

*Find an equation for each line described. If the line is nonvertical, give the slope-intercept equation. Graph each line, labeling any  $x$ - and  $y$ -intercepts.*

1. the line containing the points  $(2.4, 3.5)$  and  $(2, 6)$
2. the line containing the points  $(2, 5)$  and  $(2, \sqrt{3})$
3. the line containing the point  $(-3, 4)$  and having slope  $1/5$
4. the vertical line containing the point  $(1.02, 7)$
5. the line containing the points  $(3, 6)$  and  $(-2, 6)$
6. the line with equation  $2x - 7y + 3 = 0$
7. the horizontal line containing the point  $(7, -2)$
8. the line containing the point  $(3, 4)$  that is parallel to the line with equation  $y = -2x + 5$
9. the line containing the point  $(5, 0)$  that is parallel to the line with equation  $3x + 7y = 2$
10. the line that intersects the graph of  $y = x^2 - 2x + 3$  at  $x = 4$  and has slope 6