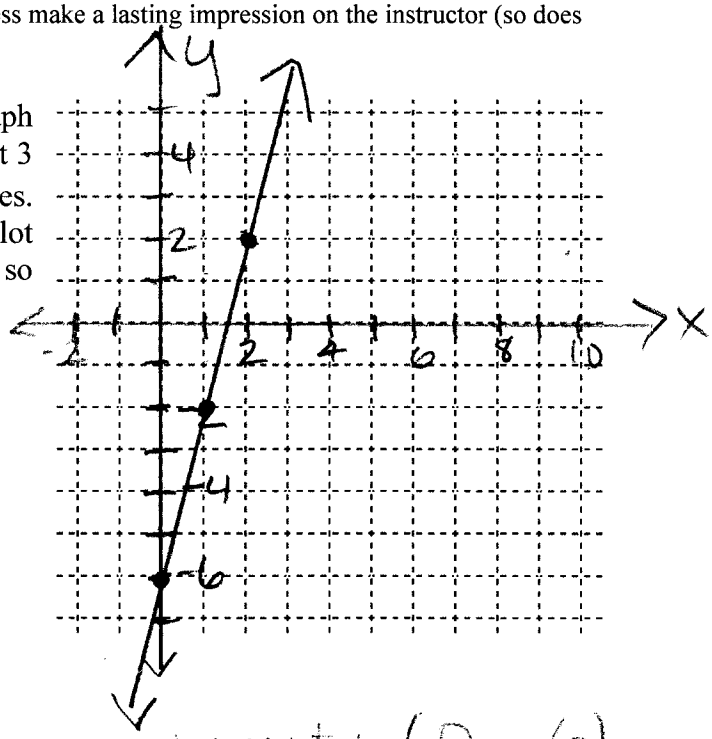
MTH 60 Worksheet 6
Instructor: Kandace Kling

Name Solutions

To earn full credit for this worksheet, you must follow the MTH 60 Documentation guidelines and do your work in pencil. No late work accepted.

Keep in mind that your homework is part of your "grade application," just as a cover letter and resume are part of a job application. Impressions count. Neatness and completeness make a lasting impression on the instructor (so does turning your homework in on time).

1. Use the slope and vertical-intercept to graph $12x-3y=18$. Use a straight-edge. Plot at least 3 points. Be sure to label and scale the axes. Choose appropriate scales so that you can plot points (without estimating) on the grid and so that both intercepts are shown.



$12x-3y-12x=18-12x$

$-3y=-12x+18$

$\frac{-3y}{-3}=\frac{-12x+18}{-3}$

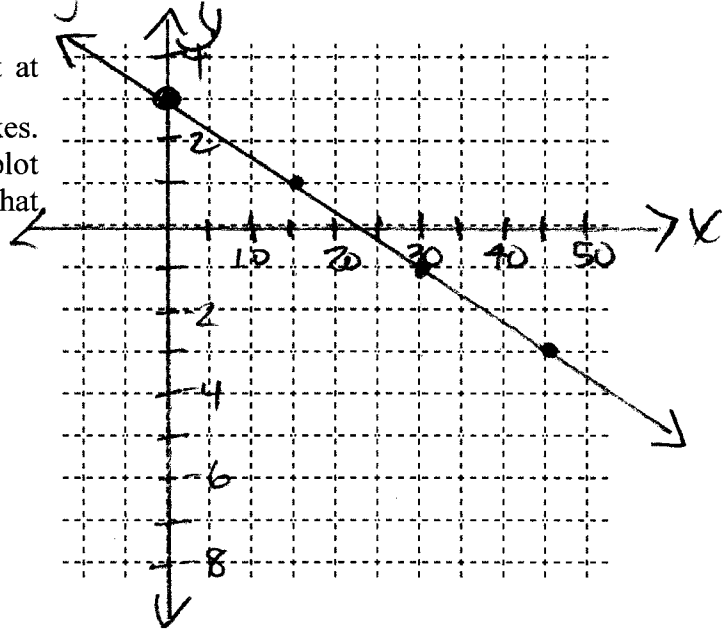
$y=\frac{-12x}{-3}+\frac{18}{-3}$

$y=4x-6$

$m=4 \quad \frac{4}{1}\ \frac{\text{rise}}{\text{run}}$

y-intercept: (0, -6)

2. Graph $y=-\frac{2}{15}x+3$. Use a straight-edge. Plot at least 3 points. Be sure to label and scale the axes. Choose appropriate scales so that you can plot points (without estimating) on the grid and so that both intercepts are shown.



$m=-\frac{2}{15} \quad \frac{-2}{15}\ \frac{\text{rise}}{\text{run}}$

y-intercept: (0, 3)

3. Find the slope of the line graphed (include the unit) and explain what it means in practical terms. Make sure to interpret the slope as a rate (as we practiced in class).

$$m = \frac{\text{rise}}{\text{run}}$$
$$= \frac{30-0}{5-0}\frac{\text{gal}}{\text{min}}$$
$$= 6\frac{\text{gal}}{\text{min}}$$

The volume of water in the tub is increasing at a rate of $6\frac{\text{gal}}{\text{min}}$.

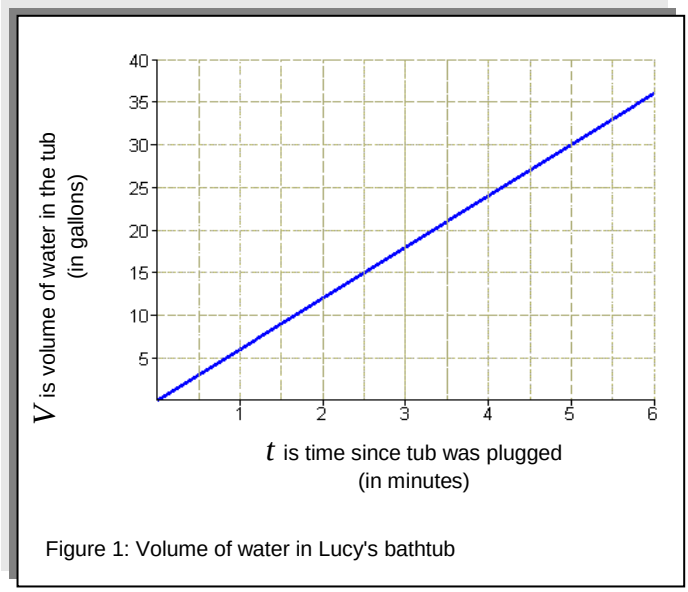


Figure 1: Volume of water in Lucy's bathtub

4. Write the point-slope form of the equation of the line passing through $(-3,5)$ with slope 2. Then use the point-slope form of the equation to write the slope-intercept form of the equation.

$$y - y_1 = m(x - x_1)$$
$$y - 5 = 2(x - (-3))$$
$$y - 5 = 2(x + 3)$$
$$y - 5 + 5 = 2x + 6 + 5$$
$$y = 2x + 11$$