Chapter 6 Practice Test Answer key

1. a) $m = -5$, y-intercept: $(0,6)$

   b) $m = \frac{5}{6}$, y-intercept: $(0,2)$
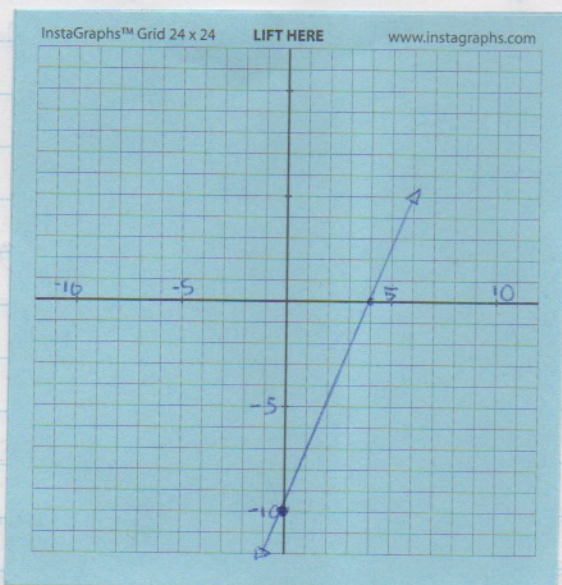
2. a) Substitute $-4/5$ for m and 6 for b in $y = mx + b$. $Y = \frac{-4}{5}x + 6$

   b) Substitute 0 for m and -8 for b in $y = mx + b$. $Y = -8$
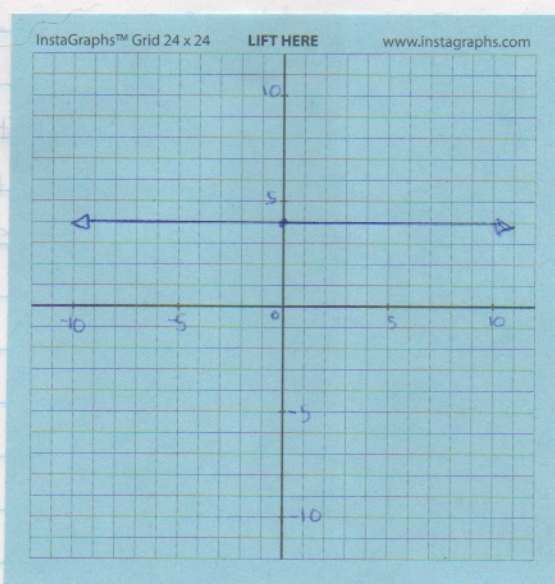
3. a) $(0,6)$, $(-2,0)$; $3x - y + 6 = 0$

   b) $(3,0)$, no y-intercept; $x - 3 = 0$

4. a) x-intercept: $(4,0)$, y-intercept: $(0,-10)$

   b) no x-intercept, y-intercept: $(0,4)$

5. a) $y-1= -4(x+2)$, $y=-4x-7$, $4x+y+7=0$

   b) $y+3= \frac{1}{2}(x-8)$, $y=\frac{1}{2}x-7$, $x-2y-14=0$

6. Example: Find the slope using the two points: $m=-4$. Write the equation in slope-point form using the slope and one of the points: $y-2 = -4(x-3)$, $y=-4x+14$ or $4x+y-14=0$

7. a) $m=-0.0035$; The temperature at which water boils decreases by $0.0035°C$ for every metre increase in altitude.

   b) $T= -0.0035d+100$

   c) $86°C$

8. $y=2$; Example: The slope of $y=-7$ is 0 and the graph is a horizontal line. Therefore, the equation of a horizontal line through $(-1,2)$ is $y=2$

9. $4x-3y+45=0$; Example: Determine the slope of the given line. Then, substitute the negative reciprocal of that slope and the coordinates of the given point into the slope-point form. Express in general form.

10. Example: First, determine that the slope of $2x+5y+10=0$ is $-2/5$. The slope of a line perpendicular to this one is $5/2$. Next, determine that the x-intercept of $3x-2y=12$ is 4. Then, use $m=5/2$ and $(4,0)$ to write the equation of the line in slope-point form. Express it in general form. $5x-2y-20=0$