**Linear Approximation Exit Ticket Answer Key**

**Exact student answers will vary. An example solution is provided.**

I have several students who work in restaurants. The data in the table below shows how many hours they worked last week and how much money each one made, including tips.



|  |  |
| --- | --- |
| **Hours** | **Money** |
| 7 | 55 |
| 4 | 40 |
| 11 | 70 |
| 8 | 60 |
| 6 | 52 |
| 13 | 100 |
| 7 | 60 |

Find the equation of a line that you think best follows the data. Show your work or include a justification of the values for your equation.

**Students should plot the data and draw a line of best fit. Check that students label the axes.**

**Select two points to find the slope: (6,50) and (11,80)**

**Slope =** $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}=\frac{80-50}{11-6}=6 ^{ \$}/\_{hours per wk}$

**Use the point (11,80) to find the y-intercept (b) in the equation** $y=6x+b$

$80=6 \left(11\right)+b$ **; solving for b results in** $b=14 \$$

**Slope-intercept form equation:** $y=6x+14$

**Where y is the money students earned (in $) and x is the hours worked (per week).**

Use your equation to determine how much you would expect someone who worked 15 hours to make. Show work.

**Let** $x=15 hours worked$

$$y=6 \left(15\right)+14=104 US \$$$