Math 2 Makin’ Money

After all your hard work learning this quadratic stuff, it’s time to earn some cash. Each problem below is worth a certain amount of money. You may select any problems to do, but you must meet two requirements:

 1: Do *at least* one problem from each level.

 2: You must make *at least* $20.00 worth of problems.

Please clearly show all work on a scratch sheet of paper. Number each problem you choose to do and write the dollar value of the problem beside it. When you have completed $20.00 worth of problems, show the boss to redeem your paycheck.

**Level 1:** $1.00

1a) Identify the Domain and Range from the graph of the function below.



1d) Write the equation for the parabola shown in the graph below in *vertex form*.



1g) Factor the following quadratic expression:

$$y=x^{2}+5x+6$$

1b) Identify the Domain and Range from the graph of the function below.



1e) What are the coordinates of the vertex given by the equation:

$$y=-7(x-3)^{2}+8$$

1h) Write an equation of a quadratic in *vertex form* that has both a reflection and a shift to the right.

1c) Write the equation for the parabola shown in the graph below in *factored form*.



1f) List the transformations given by the equation:

$$y=\frac{1}{4}F(-x)-3$$

1i) Write an equation of a quadratic in *vertex form* that has vertical stretch by a factor of 3 and a shift up 5.

**Level 2:** $3.00

2a) Write the equation for the parabola shown in the graph below in *vertex form*.



2d) Convert the following quadratic equation from *vertex form* into *standard form*:

$$y=(x+3)^{2}-10$$

2b) Factor the following quadratic expression:

$$y=20x^{2}-3x-2$$

2e) Convert the following quadratic equation from *factored form* into *standard form*:

$$y=(x-5)(x+6)$$

2c) Factor the following quadratic expression:

$$y=x^{2}-64$$

2f) There is a parabola with a vertex at $$(-2,5)$$

 and root at $$(3,0)$$

. Where is the other root? Explain or show a picture.

**Level 3:** $5.00

3a) Graph and give a table of characteristic points for a quadratic that has been reflected over the $$x$$

-axis, vertically stretched by factor of 2, and shifted up 6.

3b) Write the *standard form* equation for a parabola that crosses the $$x$$

-axis at $$-2$$

 and $$7$$

.

3c) Convert the following quadratic equation from *standard form* into *factored form*:

$$y=6x^{2}-39x+63$$