## Bell Work: 3-7-19

## A-CED.1.3

Rashawn recently spent $\$ 100$ to open a store selling tee-shirts. At his business, he purchases plain tee-shirts for $\$ 11$ each, prints

$$
15 t-100=400
$$ graphics on them, and then sells them for $\$ 26$ each. What is the minimum number of tee-shirts that Rashawn would need to sell

$$
\frac{15 t=50}{15}
$$ in order to make a profit (total income minus total expenses) of at least $\$ 400$ ?

$$
t=33,3333
$$

A. 26
B. 27
C. 33

$$
15(33)-100=395
$$

Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of each function.


$$
\begin{aligned}
& A=4 \quad B=0 \quad C=-2 \\
& \text { 1) } y=4 x^{2}-2 \\
& x=\frac{-(0)}{2(4)}=\frac{0}{8}=0 \\
& \text { A.0.5 } x=0 \\
& y=4(0)^{2}-2 \\
& \text { 0-2 } \\
& y=(-2)^{2}+4(-2)+5 \\
& =4-8+5 \\
& y=1 \text { vertex }(-2,1)
\end{aligned}
$$

$$
\begin{aligned}
& \text { ) } A=-6 \quad B=0 \quad C=3 \\
& \text { 3) } y=-6 x^{2}+3 \\
& x=\frac{-(0)}{2(-6)}=\frac{c}{-12}=0 \\
& \text { A.O.S } \quad x=0 \\
& \begin{aligned}
y & =-6(0)^{2}+3 \\
& =0+3
\end{aligned} \\
& \begin{array}{l}
y=3 \\
\text { vertex }(0,3)
\end{array}
\end{aligned}
$$

$$
\begin{aligned}
& x=\frac{-(8)}{2(-2)} \frac{-8}{-4}=\frac{2=x}{\text { A.O.S }} \\
& y=-2(2)^{2}+8(2)+6 \\
& -2(4)+16+6 \\
& -8+16+6 \\
& 14 \\
& \text { Vertex }=(2,1 y)
\end{aligned}
$$

Graph each function. Label the axis of symmetry and the vertex.

$$
\begin{aligned}
& A=1 \quad B=-2 \\
& \text { 5) } f(x)=x^{2}-2 x-1 \\
& X=\frac{-(-2)}{2(1)}=\frac{2}{2}=1
\end{aligned}
$$

AD. $5 \quad x=1$
vertex $(1,-2)$
$f(1)=(1)^{2}-2(1)-1$

$$
f(1)=1-2-1
$$

$$
f(1)=-2
$$

 symmetry

$x=0$
$x=2$

$$
\begin{array}{rlrl}
f(0) & =(0)^{2}-2(0)-1 & (2)^{2}-2(2)-1 \\
& =0-0-1 & & 4-4-1 \\
f(0) & =-1 & f(2)=-1
\end{array}
$$

$$
\begin{aligned}
& A=-3 \quad B=-6 \quad C=-8 \\
& \text { G) } f(x)=-3 x^{2}-6 x-8 \\
& x=\frac{-(-6)}{2(-3)}=\frac{6}{-6}=-1 \\
& f(-1)=-3(-1)^{2}-6(-1)-8 \\
& f(-1)=-3(1)+6-8 \\
& =-3+6-8 \\
& f(-1)=-5 \\
& \text { Vertex }(-1,-5) \quad \begin{array}{l}
-3(-2)^{2}-6(-2)-8 \\
-3(4)+12-8 \\
\\
(x, y)
\end{array}
\end{aligned}
$$

