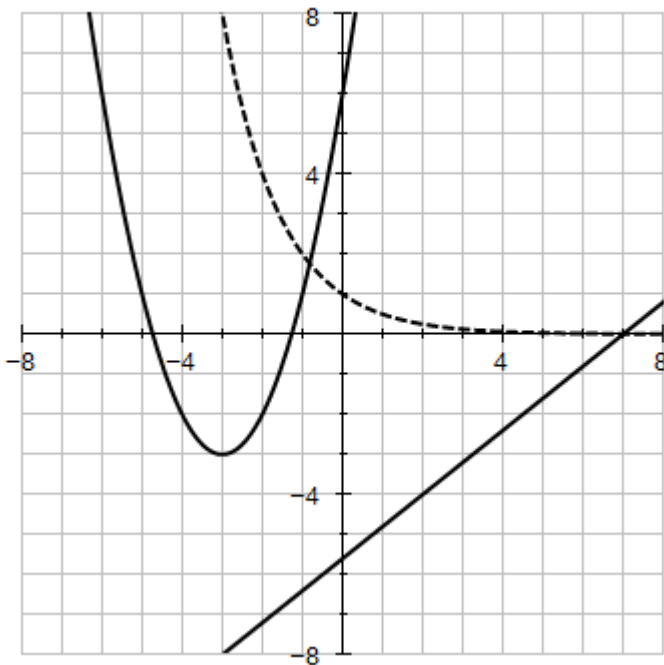
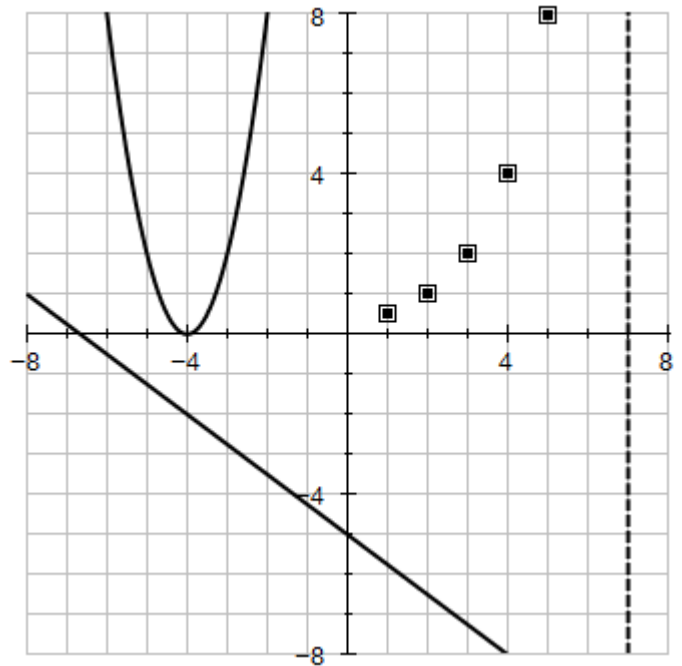


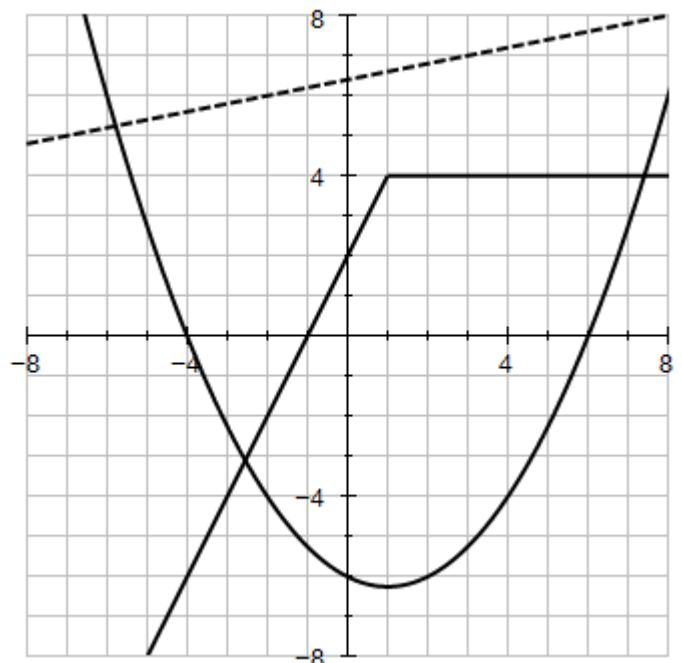
Y11 Harder Graphs Practice #3

1. For the grid to the right:
 - a. What is the equation of the solid line?
 - b. Where will the solid line intersect the dotted line? *Give full reasons.*
 - c. What is the equation of the parabola?
 - d. What rule gives a plot for the dots?



2. For the grid to the left:
 - a. What is the y-intercept of the solid line?
 - b. What is the equation of the dotted curve?
 - c. What is the equation of the parabola?
 - d. What is the equation of the parabola if it moved by vector $\begin{pmatrix} 2 \\ 5 \end{pmatrix}$?

3. For the grid to the right:
 - a. What is the equation of the solid line?
 - b. What is the equation of the dotted line?
 - c. What is the equation of the parabola?
 - d. What is the lowest point of the parabola?
Show your working.



Answers: Y11 Harder Graphs Practice #3

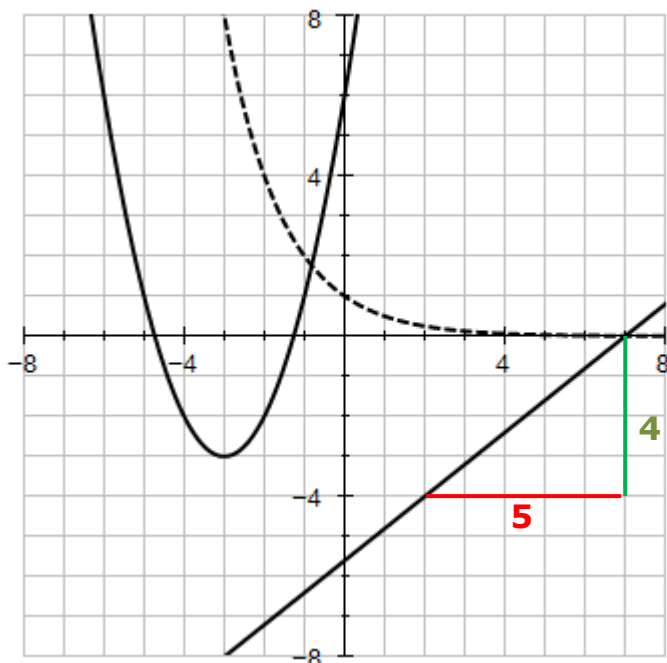
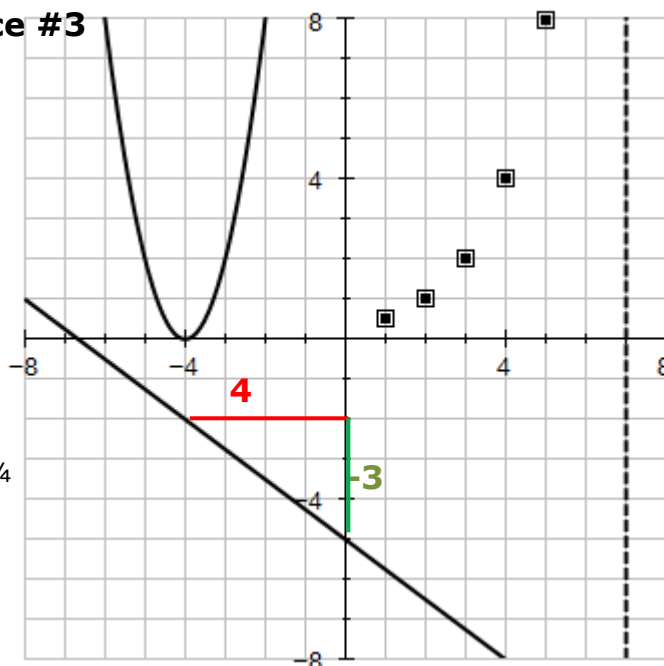
1.

a. $y = \frac{-3}{4}x - 5$

b. dotted line is $x = 7$, so put that into
 $y = \frac{-3}{4} \times 7 - 5$, which gives **(7, -10.25)**

c. $y = 2(x + 4)^2$

d. doubles for every one across, 0 would be $\frac{1}{4}$
 $y = 2^x$ graph, but moved two right
 $t_n = 2^{n-2}$



2.

a. $y = \frac{4}{5}x + c$ goes through (7, 0)
 $0 = \frac{4}{5} \times 7 + c \Rightarrow c, y\text{-intercept}, = -5.6$

b. $y = 0.5^x$ or $y = 2^{-x}$

c. $y = (x + 3)^2 - 3$

d. $\begin{pmatrix} 2 \\ 5 \end{pmatrix}$ is two right and five up,
 so -2 to x and +5 to y .

$y = (x + 1)^2 + 2$

3.

a. $y = 2x + 2$ for $x < 1$
 $y = 5$ for $x \geq 1$

b. $y = \frac{1}{5}x + c$ goes through (3, 7)
 $7 = \frac{1}{5} \times 3 + c \Rightarrow y = 0.2x + 6.4$

c. $y = \frac{1}{4}(x + 4)(x - 6)$

d. Lowest point is $x = 1$, so put that into
 formula: $y = \frac{1}{4}(1 + 4)(1 - 6) = -6.25$

