AGS 2   Name_____
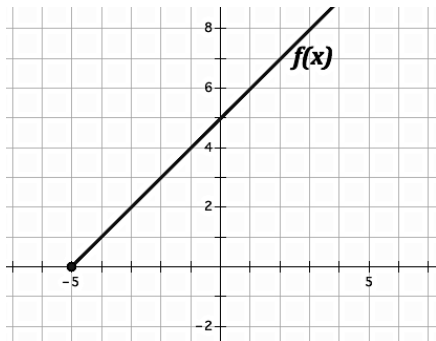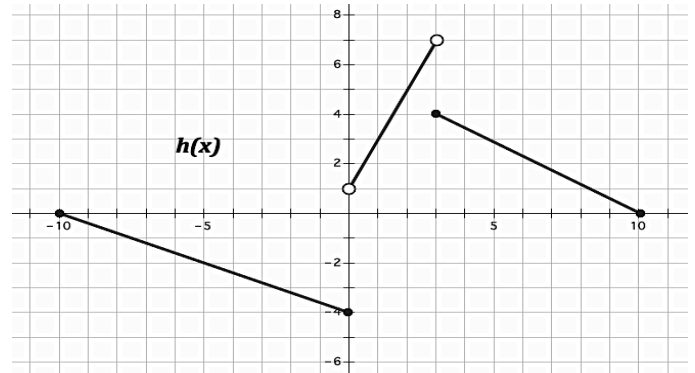Module 4.6 Homework   Period_____
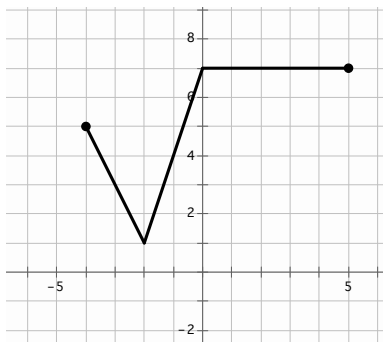
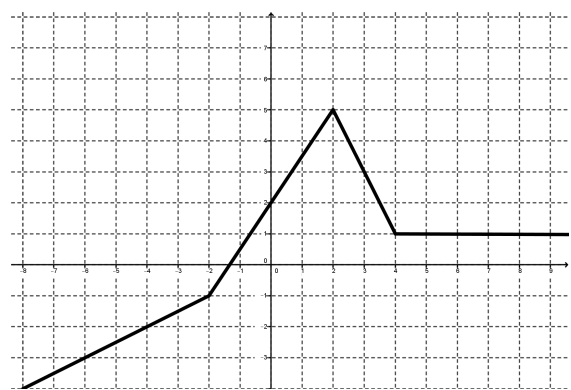Write the piecewise equations for the graphs below.
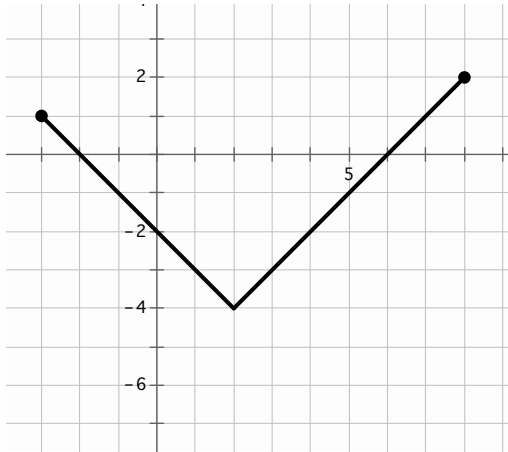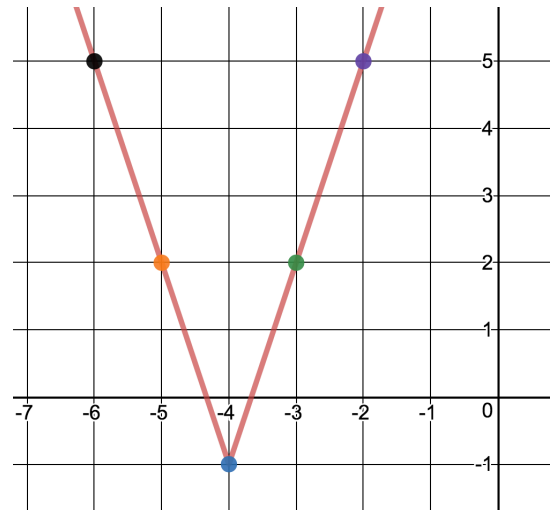
1.

2.

3.

4.

Write a piecewise equation and an absolute value equation for the below graphs.

5.

6.

The speed limit for driving in a school zone is 20 mph. That seems so slow if you're riding in a car. But have you ever wondered how quickly you could come to a complete stop going that speed (even if you had super quick reflexes)? It would take you over 13 feet! The **speed of a vehicle s** and the **stopping distance d** are related by the function $s(d) = \sqrt{30d}$.

7. Fill in the table of values for s(d). Round to the nearest whole number. Then, graph s(d) and answer the questions.

d(t)	s(d) (mph)
25	
50	
100	
200	
300	

Speed (in mph)

Stopping Distance (in ft)
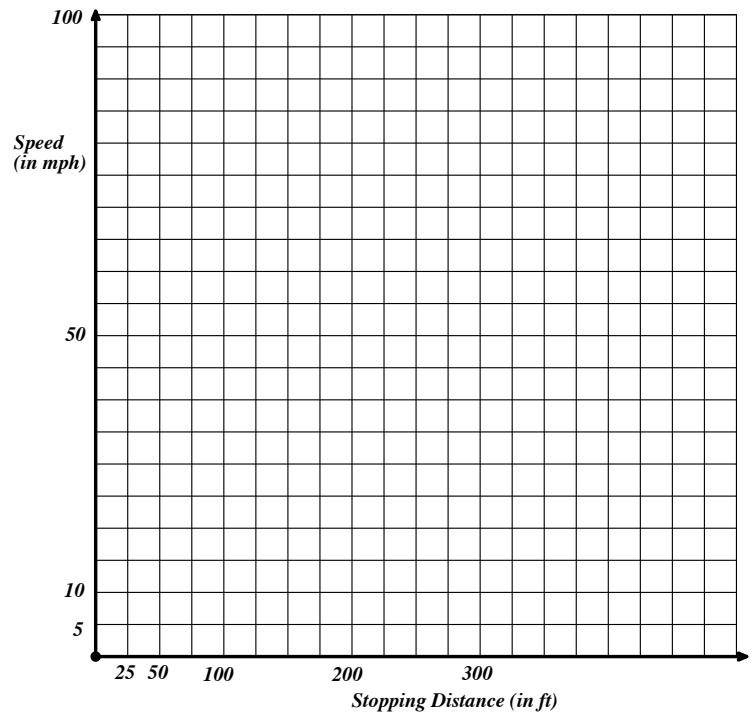
8. If you were a police officer investigating the site of an accident, you would be able to measure the length of the skid marks on the road and then approximate the speed of the driver. The driver swears he was sure he was going under 60 mph. The tire marks show a pattern for 150 feet. Is the driver's sense of speed accurate? Justify your answer.

9. Use your answers in problem 8 to make a graph of stopping distance as a function of speed.

Stopping Distance (in ft)

300

200

100

50

25

5   10   50   100

Speed (in mph)
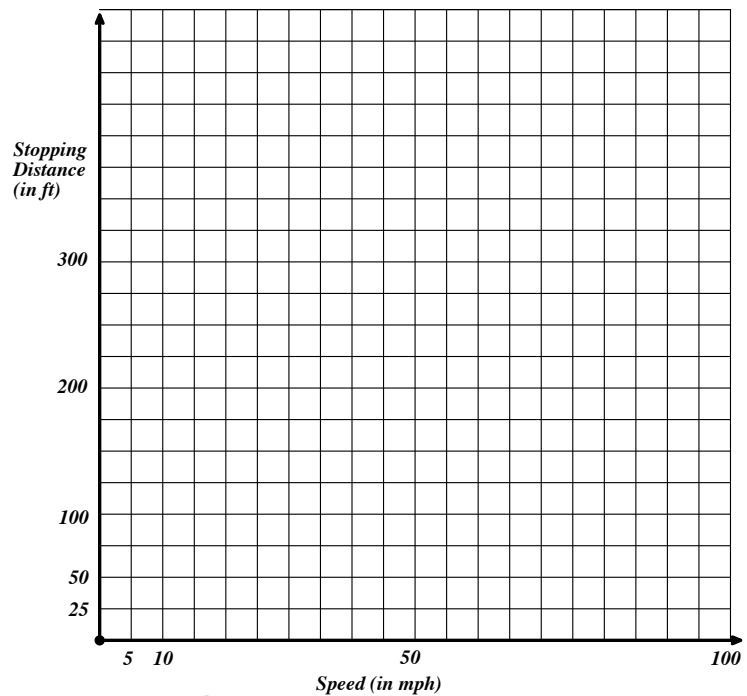
10. How are the two graphs related?

Solve:

11. $|2x - 1| = 25$

12. $5|x + 7| = 40$

13. $2|5x| - 3 = 67$

14. $-3|x - 4| = -33$