

READY, SET, GO!

Name

Period

Date

READY

Topic: Quadratic functions

Find the x-intercepts, y-intercept, line of symmetry and vertex for the quadratic functions.

Quad:  
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$



vertex

1.  $f(x) = 9x^2 + 8x - 9$   
 $0 = (x-1)(x+9)$   
 $x = 1, -9$

2.  $g(x) = x^2 - 3x - 5$   
 $x = 3 \pm \sqrt{3^2 - 4(1)(-5)}$   
 $x = 3 \pm \sqrt{9 + 20}$

3.  $h(x) = 2x^2 + 5x - 3$

Sub  $x=0 \rightarrow y = -9$   
 Symm  $\rightarrow x = \frac{-8}{2 \cdot 9} = -\frac{4}{9}$   
 Vertex  $\rightarrow (-\frac{4}{9})^2 + 8(-\frac{4}{9}) - 9 = -\frac{25}{9}$   
 Vertex:  $(-\frac{4}{9}, -\frac{25}{9})$

$x = 3 \pm \sqrt{29}$      $y = -5$   
 $\rightarrow x = 3 + \sqrt{29} \approx 8.38$   
 $\rightarrow x = 3 - \sqrt{29} \approx -3.38$   
 $\rightarrow (1.5, -7.25)$

4.  $k(x) = x^2 + 6x - 9$

5.  $p(x) = (x+5)^2 - 2 = 0$   
 sub  $y=0 \rightarrow (x+5)^2 = 2$   
 $x + 5 = \pm \sqrt{2}$   
 $x = -5 \pm \sqrt{2}$   
 Symm:  $x = -5$   
 Vertex:  $(-5, -2)$   
 Sub  $x=0 \rightarrow y = 23$

6.  $q(x) = (x+7)(x-5)$

**SET**

Topic: Independence

**Determining the independence of events can sometimes be done by becoming familiar with the context in which the events occur and the nature of the events. There are also some ways of determining independence of events based on equivalent probabilities.**

- Two events, A and B, are independent if  $P(A \text{ and } B) = P(A) \cdot P(B)$
- Additionally, two events, A and B, are independent if  $P(A|B) = \frac{P(A \text{ and } B)}{P(B)} = P(A) \cdot P(B)$

**Use these two ways of determining independent events to determine independence in the problems below and answer the questions.**

7.  $P(A \text{ and } B) = \frac{3}{5}$

$P(A) = \frac{1}{2}$

$P(B) = \frac{3}{10}$

9.  $P(A) = \frac{1}{2}$

$P(A \text{ and } B) = \frac{1}{5}$

$P(B) = \frac{2}{5}$

8.  $P(A) = \frac{1}{5}$

$P(A \text{ and } B) = \frac{1}{6}$

$P(B) = \frac{1}{3}$

$P(A) \cdot P(B) = P(A \text{ and } B)$   
 $\frac{1}{5} \cdot \frac{1}{3} \neq \frac{1}{6}$   
 dependent

10.  $P(A \text{ and } B) = \frac{2}{5}$

$P(A) = \frac{1}{4}$

$P(B) = \frac{4}{5}$

**GO**

Topic: Find Probabilities from a two-way table

The following data represents the number of men and women passengers aboard the titanic and whether or not they survived.

	Survived	Did not survive	Total
Men	146	659	805
Women	296	106	402
Total	442	765	<u>1207</u>

11.  $P(w) =$

12.  $P(s) =$

13.  $P(s|w) =$

$$\star 14. P(w \text{ or } s) = P(w) + P(s) - P(w \cap s) = 548/1207$$

$$15. P(w \text{ or } m) = 1207/1207 \text{ } 100\%$$

16.  $P(ns|w) =$

17.  $P(m \cap ns) =$

