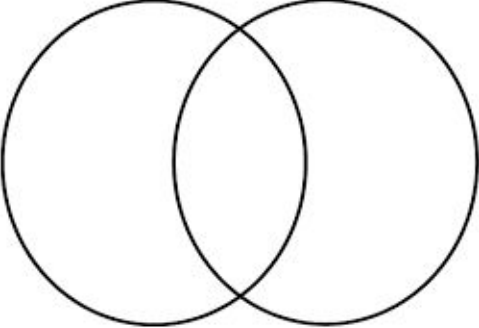
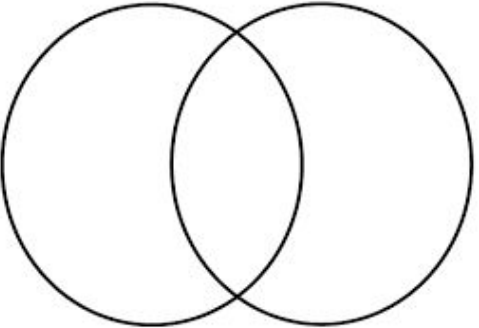
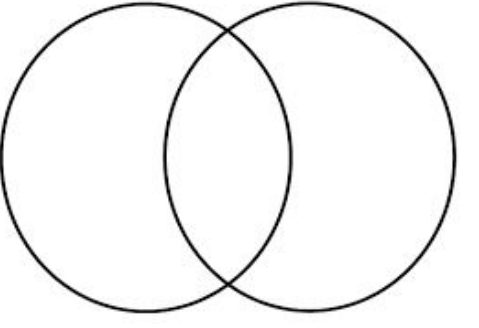


SM2. 12.3 Venn Diagrams	Name
1. Given the sets $X = \{1, 3, 6, 9, 12, 15\}$ and $Y = \{2, 4, 6, 8, 10, 12, 14\}$ Create a Venn diagram for the above sets. 	Find $X \cap Y$ Find $X \cup Y$
2. Given the sets $A = \text{Multiples of 4 from 1 - 50}$ and $B = \text{Multiples of 6 from 1 to 50}$ Create a Venn diagram for the above sets. 	Find $A \cap B$ Find $A \cup B$
3. Given the sets $A = \text{Multiples of 5 from 1 - 50}$ and $B = \text{Multiples of 3 from 1 to 50}$ Create a Venn diagram for the above sets. 	Find $A \cap B$ Find $A \cup B$

4. Given the sets
 $X = \{1,3,6,9,12,15\}$ and
 $Y = \{2,4,6,8,10,12,14\}$
 $Z = \{1,4,8,10\}$
 find $(X \cap Z)$.

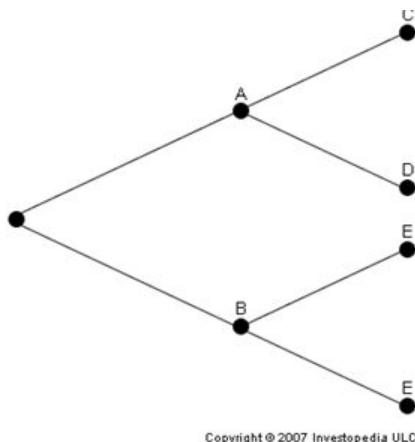
5. Given the sets
 $X = \{1,3,6,9,12,15\}$ and
 $Y = \{2,4,6,8,10,12,14\}$
 $Z = \{1,4,8,10\}$
 $(Y \cap Z) \cup X$

6-7. There is a jar of 7 twix and 12 snickers. You reach in and draw one, and then reach in and grab another.(no replacement) Complete the following Tree Diagram, and then answer the questions.

What is the probability of getting different type candy bars?

What is the probability of getting at least one twix?

What is the $P(\text{twix}|\text{snickers})$?



8-9. You have a bag of socks from laundry. In the bag there are 6 white socks and 4 black socks. You draw out one sock, keep it out, and then draw another sock.

Complete the probability tree diagram to show all the outcomes the experiment.

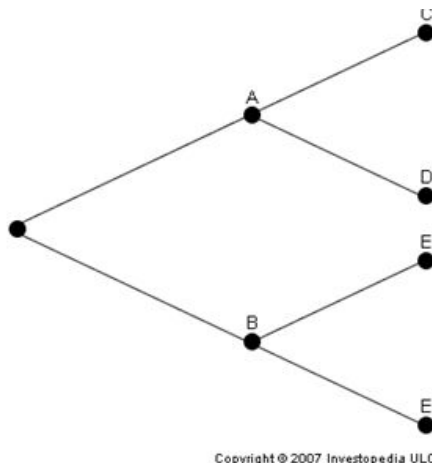
Find the probability that:

a) The sock colors match.

b) $P(W|B)$

c) one black and one white.

d) at least one white.



10 Complete the following table. There are 20 males that like car A best. 30 males that like car B best. Total males are 60. There are a total of 60 people that like car A. There are 10 females that like car B and 15 females that liked car C.

	Car A	Car B	Car C	Total
Male				
Female				
Totals				

11.

a. Find the probability of Candy A, given they are Female.

b. Find the probability that it was a Male given they picked candy B.

12.

Michael has two boxes. Box A contains 5 red tokens and 10 black tokens. Box B contains 6 red tokens and 8 black tokens. The contents of each box are shown in the table.

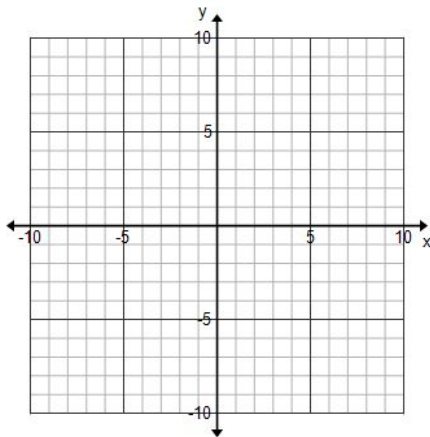
Color	Box A	Box B	Total
Red	5	6	11
Black	10	8	18
Total	15	14	29

- What is the probability of drawing a red out of Box A and then a Red out of box B?
- What is the probability of drawing a red, and then another red (no replacement) out of box A?
- What is the probability of getting a black given you are in Box B.

13. Graph the following piecewise function:

$$y = (x - 3)^2 - 7 \text{ from } (-\infty, 2]$$

$$y = 3(x - 2) - 6 \text{ from } (2, \infty)$$



14. Simplify to get the equation equal to zero then factor to find the solutions:

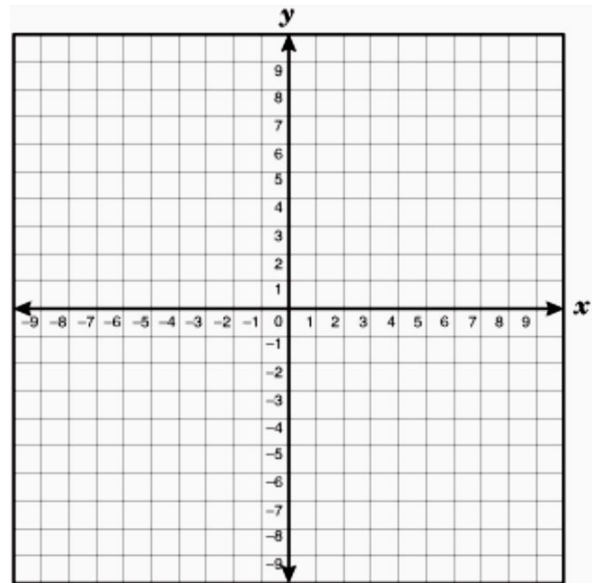
$$2x^2 + 1x - 10 = -3x + 20$$

15.

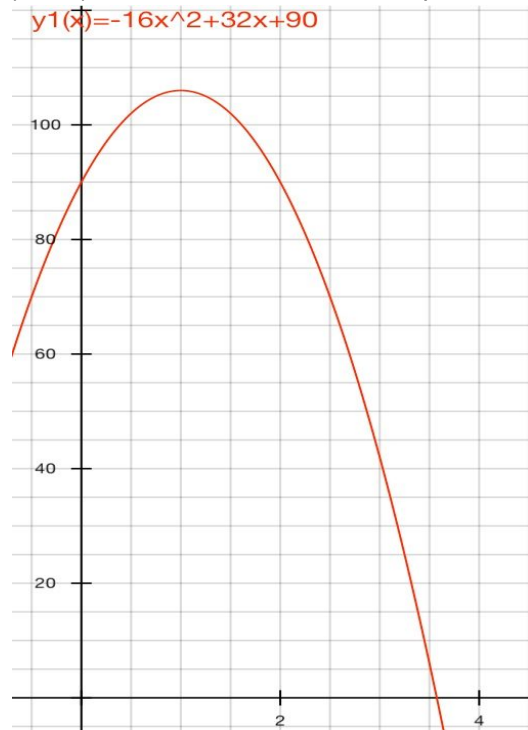
Graph the points (0,5) (-3,0) (-3,10) (-6,5)

What is the shape and how do you know?

What is the perimeter?



16. The following is a ball launched off a platform (sec,ft). Choose all the correct interpretations of the graph:



- A) The ball hits the ground at 3.1 seconds.
- B) The ball reaches a maximum height of 1 mile.
- C) The Ball has an initial velocity of 32 ft/sec.
- D) The Range for this situation is $[0, 106]$
- E) The acceleration of the object is 32 ft/sec².
- F) The ball is launched from a platform 110 ft high.
- G) The object is in the air for 3.57 seconds.
- H) The objects maximum height is 100 ft.
- I) The time to get to the max is 1 second.
- J) The Domain of this situation is $[-1, 4]$

17. a) Write in Exponential Form:
 $\sqrt{x^5}$

b) Simplify: $(100x^{-4})^{\frac{5}{2}}$

c). Fill in the following numbers to make each equation a growth or a decay.

-5, 1.3, 0.78, $\frac{1}{2}$, 8, 2,

EXPONENTIAL GROWTH

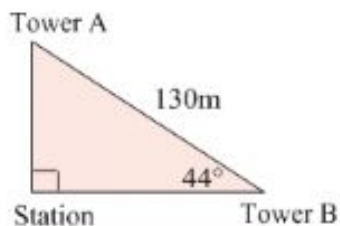
$$y = (\quad)^x$$

EXPONENTIAL DECAY

$$y = (\quad)^x$$

18.

Three telephone wires connect two towers and the station. How much wire is needed to connect Tower B to the station?



19. Find the distance across the lake.

