NAME:_____

12.1 Introduction to Probability

Sample Space:

Coin:

Die:

Event:

Probability:

P(event) =

P(tails) = P(rolling a 2)= P(rolling an odd #)=

In a bag there are 4 blue marbles, 2 red marbles, 5 green marbles and 1 white marble.

P(red marble) = P(purple marble) = P(marble) =

The Mad King Kelly tosses 3 coins in the air all at once. He promises free food for all his peasants if 2 of the coins come up tails.

Sample Space: P(2 tails) =

A deck of cards has 4 suits (hearts, diamonds, spades and clubs). Each suit has 13 cards (2 - 10, jack, queen, king, ace). Hearts and diamonds are red cards. Clubs and spades are black cards. Face cards are jack, queen and king.

P(picking a heart) =

P(not picking a club) =

P(picking a jack) =

P(not picking a face card) =

The Mad King Kelly is going to throw Sully into the dungeon unless he can hit the blue ring with an arrow. Assuming he's definitely going to hit the board, what's the probability of the dart landing in the blue section if the diameter of the red circle is 18 and the diameter of the blue circle is 22?

The Mad King Kelly tells Brust he'll spare his life if he can hit the circle target with a tomahawk. What's the probability of Brust hitting the circle if he knows the area of the rectangle is 24 square feet?

You try:

Summary:

_____

_____

_____

_____

12.1 Practice Problems

A bag contains 4 red marbles, 5 white marbles, 3 maroon marbles and 1 blue marble.

1) Draw a diagram of the sample space.

Find the given probabilities.

2) P(red marble)=

3) P(green marble)=

4) P(maroon marble)=

5) P(not a blue marble)=

Roll two dice and add up what numbers show.

6) Make a tree diagram to show the sample space

Find the given probabilities

7) P(sum of 10)=

8) P(sum of 2) =

9) P(sum less than 9)=

10) What sum has the highest probability? What is it?

A deck of cards has 4 suits (hearts, diamonds, spades and clubs). Each suit has 13 cards (2 - 10, jack, queen, king, ace). Hearts and diamonds are red cards. Clubs and spades are black cards. Face cards are jack, queen and king.

11) Make a diagram of the sample space.

Find the given probabilities

12) P(picking a heart)=

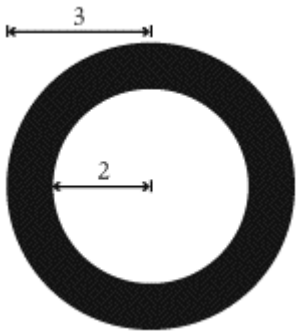
13) P(face card)=

14) P(not a face card)=

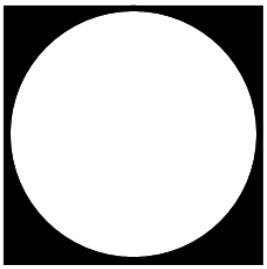
15) P(a red face card)=

Directions: Find the probability of a point being in the shaded region.

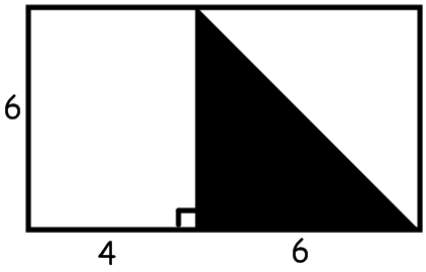
16



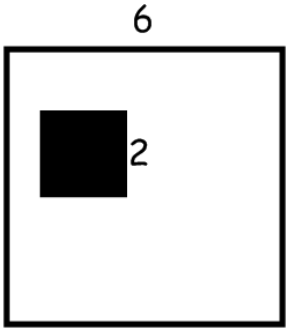
17) Square with sides of length 4 inches.



18) Rectangle and right triangle



19) Two squares

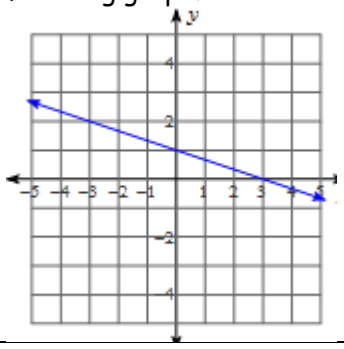


Algebra Review

Solve:
$-30 - 4x \geq -2(8x + 3)$

Solve:
5(8 – 6n) = 11 - n

Write the equation of the line for the following graph.



Factor Completely: Double Factor
$24k^2 - 20k - 24$

Factor Completely:
$p^2 + 10p + 25$

Solve the system using elimination:
-x + 8y = 6
X – y = 8

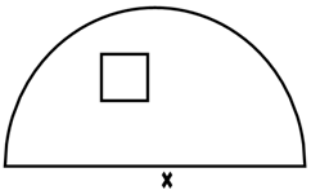
12.1 APPLICATION and EXTENSION

You toss 4 coins in the air.	
1) Make a tree diagram to show the sample space	Find the given probabilities 2) P(exactly 1 heads)= 3) P(exactly 3 tails)= 4) P(no tails)= 5) P(4 heads)=

6) Recently there have been many meteors that have come close to hitting the earth. If the area of the United States is 3,679,245 square miles and the surface area of the Earth is 196,940,400 square miles what is the probability that a meteor that hits the planet would land in the United States?

Since we are living in Europe (10,180,000 square miles) what is the probability of that meteor hitting this continent?

7) Brust wants to overthrow the Mad King Kelly's rule and take control of the throne. He lines up his catapult outside the city's walls. He knows that his catapult is not that accurate and that it could end up anywhere in a semi-circle(see pic) with radius 3000 feet. If the Mad King Kelly's castle is a square with sides 750 feet what is the probability that one of Brust's flaming catapults hits the Mad King's castle?



8) Mr. Kelly wants to teach his eldest daughter how to become an unstoppable scoring threat on the court. He tells his daughter that if she can learn to hit the 2 inch rectangle stripe at just the right angle and speed from anywhere on the floor it will always go in. What's the probability that a shot hitting the backboard will hit this black stripe?