**PROBABILITY**

NOTES:

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1. A password is made up of six characters. The first three are numbers and the last three are letters. How many codes are possible if the digit 9 cannot be used, the letter Z cannot be used and nothing can repeat?

2. Team A beat team B 33 times out of the 50 times they have played. Find the following:

a) P(team A wins) b) P(team B wins) c) P(team B loses)

d) Odds(team A wins) e) Odds(team B wins) f) Odds(team B loses)

3. What is the probability of rolling a two on a standard die, flipping a heads on a coin and drawing a Jack from a standard deck of cards?

4. If two standard dice are rolled, what is the probability of rolling an even number on the first and a multiple of three on the second?

5. If one standard die is rolled, what is the probability of rolling an even number or a multiple of three?

6. Given a standard deck of cards, what is the probability of drawing a red card or a King?

7. A grab bag contains 12 packages worth 80 cents apiece, 15 packages worth 40 cents apiece and 25 packages worth 30 cents apiece. What is the expected value of one draw? Is it worthwhile to pay 50 cents for the privilege of picking one of the packages at random?

**TRIGONOMETRY**

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1. A person stands 200 feet away from a building that is 400 feet tall. At what angle of elevation would he look to see the top of the building?

2. A person looks at a 15° angle of elevation and sees a hot air balloon. The balloon is 275 feet in the air. How long is the direct line between the person and the balloon?

**3.** Given with , , use the Law of Sines to solve the triangle.

**4.** Two sides of a triangular have lengths of 30 ft. and 24 ft. The angle formed by those sides measures 130⁰. Find the length of the missing side, the perimeter and the area of the triangle.