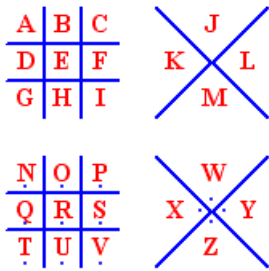October 27, 2012

Part I
Preparing for Halloween!

1. Use the Pigpen Cipher to decode the title of this worksheet!

What is the title?

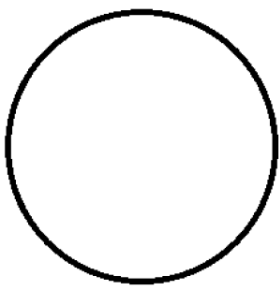2. 3 boys carve 3 pumpkins in 3 days. How many pumpkins will 12 boys carve in 12 days?

3. 5 girls decorated 5 windows in 5 days. How long will it take 10 girls to decorate 10 windows?

4. Can you bake a cake in a shape that you can cut into 3 parts by making a single cut?

   (a) Draw the shape and the cut.

   (b) Can you bake a cake in shape that you can cut into 4 parts with a single cut? Draw the shape and the cut.

5. What is the biggest number of pieces you can get if you cut a round pumpkin pie using 3 straight cuts?
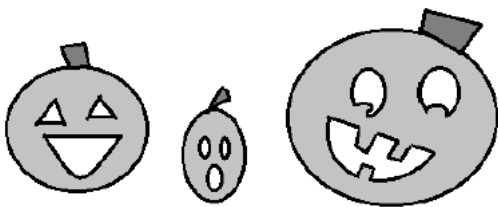
6. A couple of your friends and you decide to go to a graveyard to prepare for the fun of Halloween. Can all 4 tombstones in a graveyard be at equal distance from each other if:

 (a) They are in a line?

 (b) They are on flat ground?

 (c) They are on a hill?

7. Below are 3 pumpkins that Melinda carved.

She gave them to Cory, who wants to arrange them in a row in front of his house. How many different rows of pumpkins could Cory make with these three pumpkins?

8. How many ways could Cory arrange the pumpkins in a row if two of the three pumpkins look identical?

9. Melinda is trying to figure out a costume to wear tonight, which will consist of one hat, one shirt, and one pair of pants. If Melinda has 2 hats, 4 shirts, and 3 pairs of pants, how many different costumes could Melinda make?

Part II
Halloween Night!

1. CHALLENGE: Two witches fly towards each other starting 30 meters apart, both at 5 meters per second.

   (a) How soon will they meet?

   (b) While the witches are flying, a bat circles around with the speed of 25 meters per second. What is the distance the bat covers while the witches are flying?
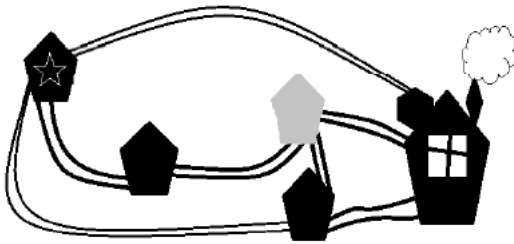
2. Casper the Ghost is exactly 300 years older than Jasper the Ghost. Jasper became a ghost on October 31st, 1912.

   (a) How old is Casper and Jasper in present day 2012?

   (b) How many times older is Casper compared to Jasper in present day 2012?

   (c) When will Casper be twice as old as Jasper?

3. Here is a map of some streets and houses.

   (a) How many different paths could Emmanuelle take from her house (with the star) to the big spooky house (with the chimney), without revisiting a house or a street?

(b) Emmanuelle is too afraid to go to the spooky house alone, so she needs to stop by Kaley's house (the grey one) on the way so Kaley will join her. How many different paths can she take now (again without revisiting a house or a street)?
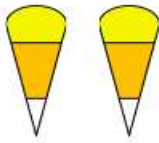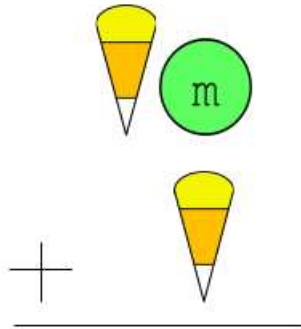
Part III
Halloween Aftermath

1. After going trick-or-treating, Melinda has a big bag of Skittles. She puts 10 green and 10 red Skittles into a bag, and lets Cory pick some out.

   (a) How many Skittles does Cory need to take out to make sure he picks at least 2 Skittles that are the same color?

   (b) How many Skittles does he need to take out to make sure he picks at least 3 Skittles of the same color?

2. Melinda also has 7 plain chocolate bars, and 5 chocolate bars with almonds. She puts them all into a bag and lets Emmanuelle pick some out.

   (a) How many chocolate bars does Emmanuelle need to take out of the bag to make sure she gets at least 1 chocolate bar with almonds?

(b) How many does Emmanuelle need to take to make sure she has at least 2 plain chocolate bars and at least 3 chocolate bars with almonds?

3. Here's an addition problem I've created.

What number does the candy corn represent?

What number does the M&M represent?

4. I was so happy that Halloween will be on a Wednesday this year!

   (a) What day of the week will it be next year? (*Hint:* there are 365 in a regular year).

   (b) When is the next year it will be on a Wednesday? (*Hint:* the year 2016 will be a *leap year*. Unlike a regular year, a leap year has 366 days).

5. I decided to count how many pieces of candy I got on Halloween. First, I took a third of the candy from the bag. Then I put 10 pieces back. Then I took all the remaining candy, which was 90 pieces! How much candy did I have to begin with?