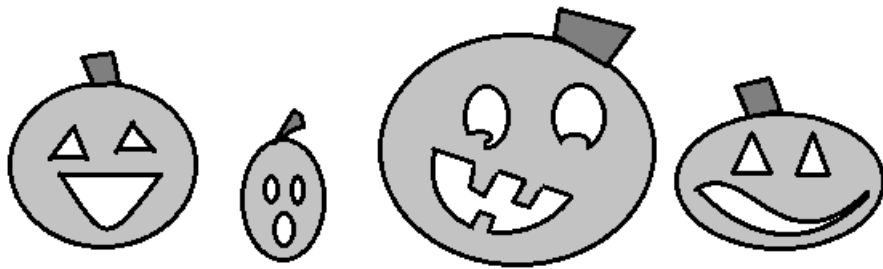


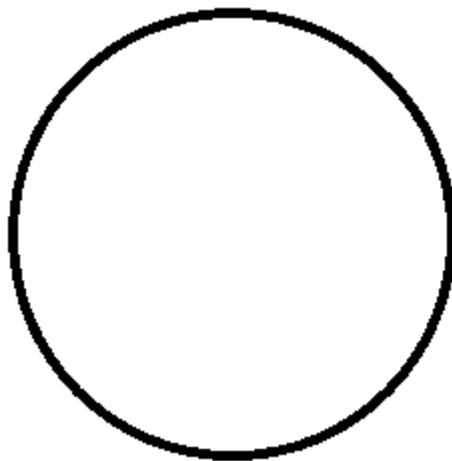
# Halloween Math Fun!

October 31, 2010



1. 3 boys carve 3 pumpkins in 3 days. How many pumpkins will 12 boys carve in 12 days?
  
  
  
  
  
  
  
  
  
  
2. 5 girls decorated 5 windows in 5 days. How long will it take 10 girls to decorate 10 windows?

3. Casper the Ghost is exactly 300 years older than Jasper the Ghost. Jasper became a ghost on October 31st, 1910.
- (a) What is Casper and Jasper's average age?
- (b) When will Casper be twice as old as Jasper?
4. Can you bake a cake in a shape that you can cut into 4 parts by making 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?

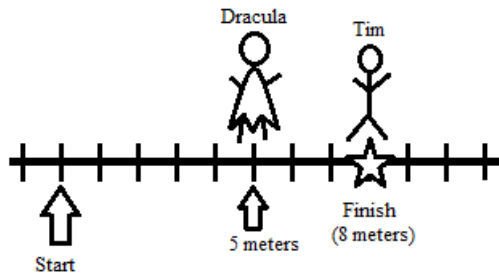


6. After going trick-or-treating, Melanie has a big bag of Skittles. She puts 10 green and 10 red Skittles into a bag, and lets Rosalie pick some out.
- (a) How many Skittles does Rosalie need to take out to make sure she picks at least 2 Skittles that are the same color?
  
  
  
  
  
  
  
  
  
  
  - (b) How many Skittles does she need to take out to make sure she picks at least 3 Skittles of the same color?
7. Melanie also has 7 plain chocolate bars, and 5 chocolate bars with almonds. She puts them all into a bag and lets Alex pick some out.
- (a) How many chocolate bars does Alex need to take out of the bag to make sure he gets at least 1 chocolate bar with almonds?
  
  
  
  
  
  
  
  
  
  
  - (b) How many does Alex need to take to make sure he has at least 2 plain chocolate bars and at least 3 chocolate bars with almonds?

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

9. Could 4 tombstones on a graveyard be at equal distances from each other? Draw a picture to show how this can be done.

10. Walking home one night, Tim ran into Dracula! Dracula challenges Tim to three 8-meter races. If Tim wins at least two of the races, he will be allowed to continue home safely. Tim accepts, and he wins the first race! When Tim crosses the finish line in the first race, Dracula has only run 5 meters.



- (a) Dracula says that Tim had an unfair advantage in the first race, so for the second race, Tim starts at the original, 8-meter starting line, and Dracula starts 3 meters in front of Tim. If they both run the same speed as in the first race, who wins the second race? You may find it helpful to draw a picture or use the line below:

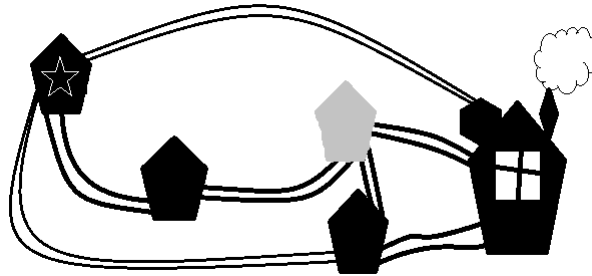


- (b) For the third race, Dracula decides to change things again. This time, Dracula starts at the original 8-meter starting line, and Tim starts exactly 3 meters behind him. Who wins this race? (You may again find it helpful to draw a picture.)



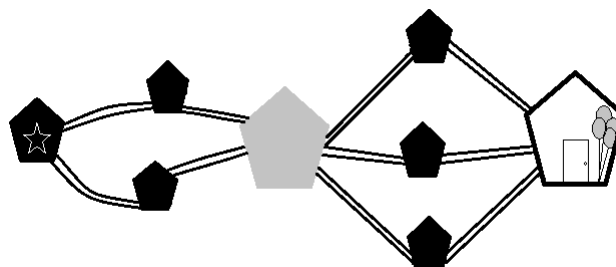
- (c) Did Tim win 2 of the 3 races and survive?

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



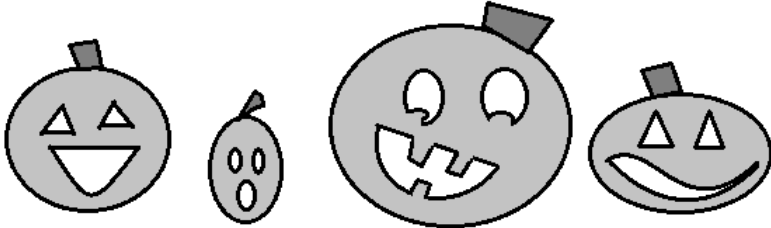
- (a) How many different paths could Shannon take from her house (with the star) to the big spooky house (with the chimney), without re-visiting a house or a street?
- (b) Shannon is too afraid to go to the spooky house alone, so she needs to stop by Melanie's house (the grey one) on the way so Melanie will join her. How many different paths can she take now (again without re-visiting a house or a street)?

12. You've been invited to an exciting Halloween party at your friend's house.



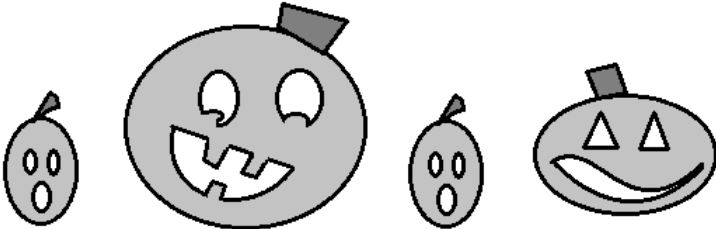
You plan to go trick-or-treating at every house you come across on the way to the party. You hear that there is one house (the grey house) which is giving out the best candy, so you want to make sure to stop there. Starting from your house (starred), how many different paths can you take to the party house (with balloons), making sure you stop at that best-candy house?

13. Below are 4 pumpkins that Shannon carved.



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

14. How many ways could Daniel arrange the pumpkins in a row if two of the four pumpkins look identical?





15. CHALLENGE: Two witches fly towards each other starting 30 miles apart, at 5 mph and 10 mph. A bat starts at the slower witch, and flies at 25 mph to the other witch. Each time it reaches a witch it turns around and flies back to the other one. What distance has the bat covered when the witches met?

