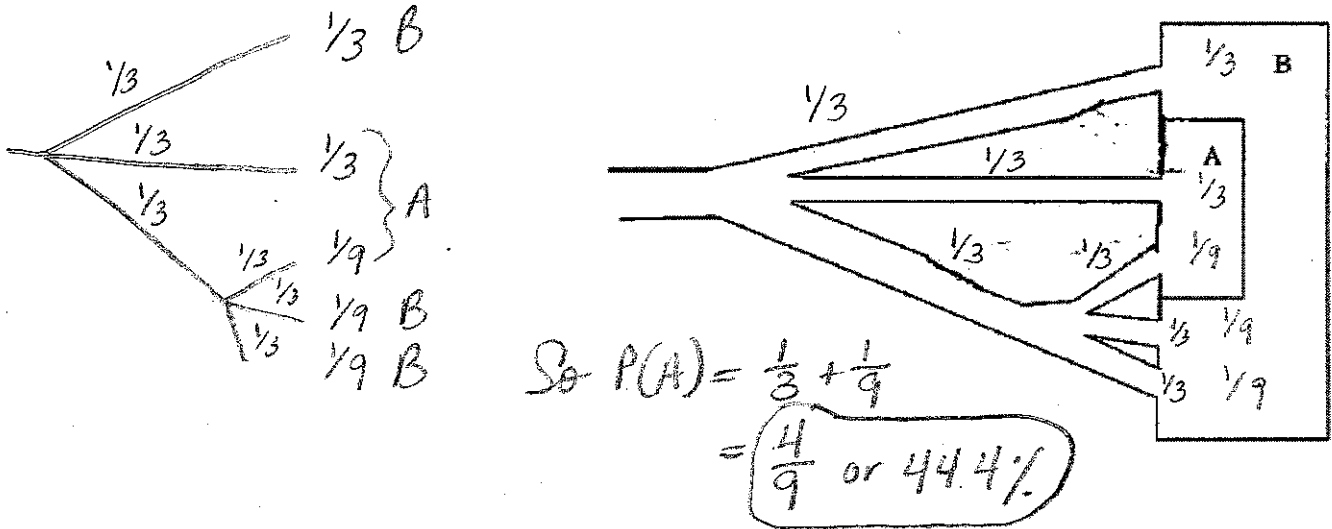


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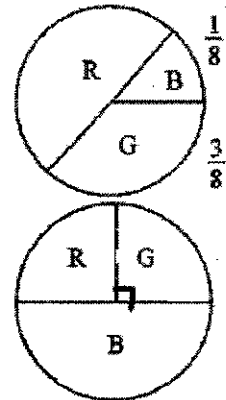
## GEOMETRY: Chapter 4 TEST REVIEW

- 1) Boris the rat is trying to find food in the maze shown below. Boris is equally likely to take any path when coming to an intersection. If the food is stored in area A, what is the probability that Boris finds food? Show all of your calculations!



- 2) A game is played by spinning two spinners. If the colors match, the player wins. What is the probability that a player loses? CLEARLY demonstrate how you are solving by the problem by an area model.

(R = RED, G = GREEN, B = BLUE)



Top Spinner  
 $R(\frac{1}{2}) \quad B(\frac{1}{8}) \quad G(\frac{3}{8})$

Bottom Spinner  
 $R(\frac{1}{4})$   
 $G(\frac{1}{4})$   
 $B(\frac{1}{2})$

$\frac{1}{8}$	$\frac{1}{32}$	$\frac{3}{32}$
$\frac{1}{8}$	$\frac{1}{32}$	$\frac{3}{32}$
$\frac{1}{4}$	$\frac{1}{16}$	$\frac{3}{16}$

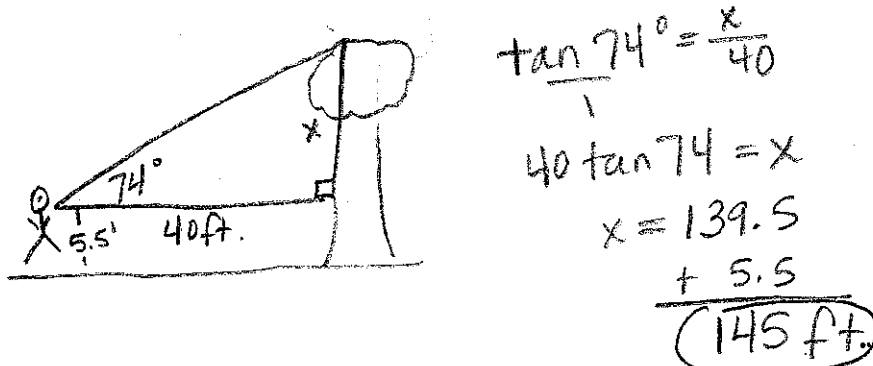
$P(\text{not matching}) =$   
 $\frac{1}{32} + \frac{3}{32} + \frac{1}{8} + \frac{1}{32} + \frac{1}{4} + \frac{3}{16}$   
 $= \frac{23}{32}$  or 71.88%

3) When George goes to King of Burgers, he orders a sandwich and a side order. For the sandwich, 15% of the time he orders a Jumbo Burger, 60% of the time he orders a Chicken Sandwich and 25% he orders a Regular Burger. For the side, 20% he orders Jumbo Fries, 50% of the time he orders Curly Fries and the rest of the time he orders a salad. George just bought lunch what is the probability that he ordered a Jumbo Burger with Fries or a Chicken Sandwich with a Salad? Make an area or tree diagram to help with the problem.

		Sandwich		
		JB(15)	CS(60)	RB(25)
Side	JF(.20)	.03	.12	.05
	CF(.50)	.075	.3	.125
	S(.3)	.045	.18	.075

$P(\text{JB \& Fries}) + P(\text{CS \& Salad})$   
 $.03 + .075 + .18$   
.285 or 28.5%

4) Aubrey wants to find the height of a tree outside her home. Using her clinometer, she measures the slope angle from 40 feet away base of the tree and gets an angle of  $74^\circ$ . If Aubrey's eye level is 5.5 feet above the ground, how tall is the tree? Draw a picture.

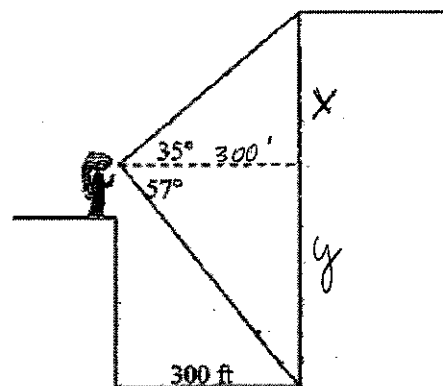


5) Alana is at the top of an overlook below a waterfall in Yellowstone National Park. From reading the information about the waterfall, she knows that the overlook is exactly 300 feet away from the waterfall. Unfortunately, the information about the height of the waterfall has worn off of the plaque. Wanting to know the actual height, Alana measures the angle of elevation to the top of the falls from her position and finds it is  $35^\circ$ . When she measures the angle of depression to the base of the falls, she finds that it is  $57^\circ$ . Using this information, find the height of the falls.

$\tan 35 = \frac{x}{300}$   
 $x = 300 \tan 35$   
 $x = 210.06$

$\tan 57 = \frac{y}{300}$   
 $y = 300 \tan 57$   
 $y = 461.96$

$210.06 + 461.96 = \underline{672.02 \text{ ft.}}$

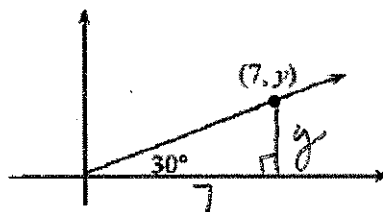


- 6) The line to the right goes through the point  $(7, y)$ . If the angle the graph makes with the x-axis is  $30^\circ$ , what is the y-coordinate of the point?

$$\tan 30 = \frac{y}{7}$$

$$y = 7 \tan 30$$

$$y = 4.04$$



- 7) Find the perimeter of the triangle below.

Use Pythagorean Thm.

$$\tan 23 = \frac{x}{5}$$

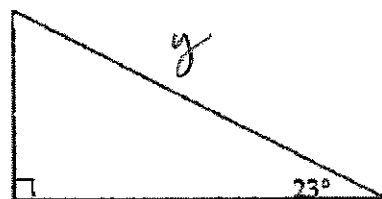
$$x = 5 \tan 23$$

$$x = 2.12 \text{ in.}$$

$$(2.12)^2 + 5^2 = y^2$$

$$29.49 = y^2$$

$$y = 5.43 \text{ in.}$$



$$\text{So } P = 5 + 2.12 + 5.43 = 12.55 \text{ in.}$$

For the following multiple choice questions, please place the letter answer on the line.

- D 8) Given  $\triangle PQR \sim \triangle JTL$ , which of the following could be used to solve for  $x$ ?

A)  $\frac{x}{11} = \frac{4}{6}$

B)  $\frac{x}{12} = \frac{4}{6}$

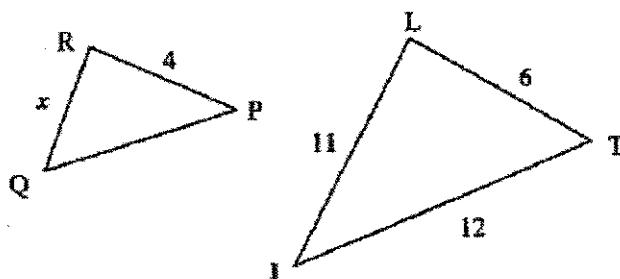
C)  $\frac{x}{4} = \frac{11}{12}$

D)  $\frac{x}{4} = \frac{6}{11}$

$$\frac{QR}{TL} = \frac{PR}{JT}$$

$$\frac{x}{6} = \frac{4}{11}$$

or  $\frac{x}{4} = \frac{6}{11}$



A

- 9) Find the perimeter of the square:

A)  $8x - 16$

B)  $9x^2 + 4x$

C)  $6x - 4$

D)  $4x^2 - 16x + 16$

$$P = 4(2x - 4)$$

$$P = 8x - 16$$

