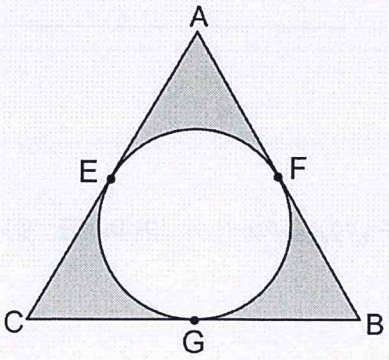
Bellwork Alg 2B Friday, April 20, 2018

1. The circle is inscribed in equilateral $\triangle ABC$. $AB = 12cm$. Points E, F, and G are midpoints. Find the probability that a point picked at random is in the shaded region. Give answer as a percent to the nearest hundredth.



P(Shaded Region)=

2. The coach wants the star player to take the next shot. The probability that the player makes a 3-pt basket is $\frac{2}{5}$. The probability that the player makes a 2-pt basket is $\frac{3}{7}$. Find the following probability as a percent rounded to the nearest tenth.

P(makes a 3-pt basket or makes a 2-pt basket) =

3. At a restaurant you want to order pizza. There are 8 toppings to choose from.

a) You and your sister are each going to order an individual pizza. You want 4 toppings on your pizza and your sister is going to get 3 toppings. Find the number of different ways you could order a pizza and your sister could order her pizza.

b) Instead of two individual pizzas you will order one large pizza that the two of you will share. Find the number of 4 topping large pizzas or 3 topping large pizzas that the two of you could order.

4. The probability that I'm using my cell phone is $\frac{7}{10}$ and the probability that I'm driving somewhere is $\frac{3}{8}$. Find the probability that I'm driving or I'm using my cell phone as a percent to the nearest hundredth.

P(driving or using cell phone) =

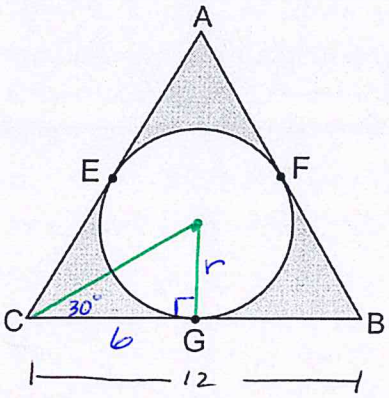
5. For your picnic you are going to bring some fruit, drinks, and snacks. At the store there are the following to choose from: 6 different fruits, 8 different drinks, and 7 different snacks. Find the number of different ways you could bring 5 fruits, 5 drinks, and 5 snacks.

6. There are ten candidates for a job. The search committee will choose four of them, and rank the chosen four from strongest to weakest. How many different outcomes are possible?

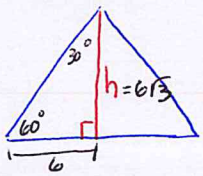
ANSWERS

Bellwork Alg 2B Friday, April 20, 2018

1. The circle is inscribed in equilateral $\triangle ABC$. $AB = 12cm$. Points E, F, and G are midpoints. Find the probability that a point picked at random is in the shaded region. Give answer as a percent to the nearest hundredth.



Area of $\triangle ABC$



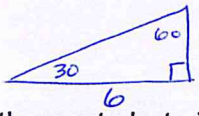
$A = \frac{1}{2}bh = \frac{1}{2}(12)(6\sqrt{3}) = 36\sqrt{3}$

P(Shaded Region)=

$= \frac{\triangle ABC - \text{circle}}{\triangle ABC} = \frac{36\sqrt{3} - \pi(2\sqrt{3})^2}{36\sqrt{3}} =$ **39.54%**

Area of circle

radius of circle = short leg of 30-60-90 $\triangle$



$r = \frac{6}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = 2\sqrt{3}$

2. The coach wants the star player to take the next shot. The probability that the player makes a 3-pt basket is $\frac{2}{5}$. The probability that the player makes a 2-pt basket is $\frac{3}{7}$. Find the following probability as a percent rounded to the nearest tenth.

THESE ARE MUTUALLY EXCLUSIVE

P(makes a 3-pt basket or makes a 2-pt basket) =

$\frac{2}{5} + \frac{3}{7} =$ **82.9%**

3. At a restaurant you want to order pizza. There are 8 toppings to choose from.

a) You and your sister are each going to order an individual pizza. You want 4 toppings on your pizza and your sister is going to get 3 toppings. Find the number of different ways you could order a pizza and your sister could order her pizza.

$_8C_4 \cdot {}_8C_3 = 70 \cdot 56 =$ **3920**

b) Instead of two individual pizzas you will order one large pizza that the two of you will share. Find the number of 4 topping large pizzas or 3 topping large pizzas that the two of you could order. $70 + 56 =$ **126**

4. The probability that I'm using my cell phone is $\frac{7}{10}$ and the probability that I'm driving somewhere is $\frac{3}{8}$. Find the probability that I'm driving or I'm using my cell phone as a percent to the nearest hundredth.

P(driving or using cell phone) =

THESE AREN'T MUTUALLY EXCLUSIVE

$\frac{7}{10} + \frac{3}{8} - \frac{7}{10} \cdot \frac{3}{8} =$ **81.25%**

5. For your picnic you are going to bring some fruit, drinks, and snacks. At the store there are the following to choose from: 6 different fruits, 8 different drinks, and 7 different snacks. Find the number of different ways you could bring 5 fruits, 5 drinks, and 5 snacks.

$_6C_5$ (FRUIT) $\cdot$ $_8C_5$ (DRINK) $\cdot$ $_7C_5$ (SNACK) $= 6 \cdot 56 \cdot 21 =$ **7056**

6. There are ten candidates for a job. The search committee will choose four of them, and rank the chosen four from strongest to weakest. How many different outcomes are possible?

$_{10}P_4 =$ **5040**