

Day 4: Quiz 1 and Review

Honors Math 2
Unit 6: Probability

Warm-up

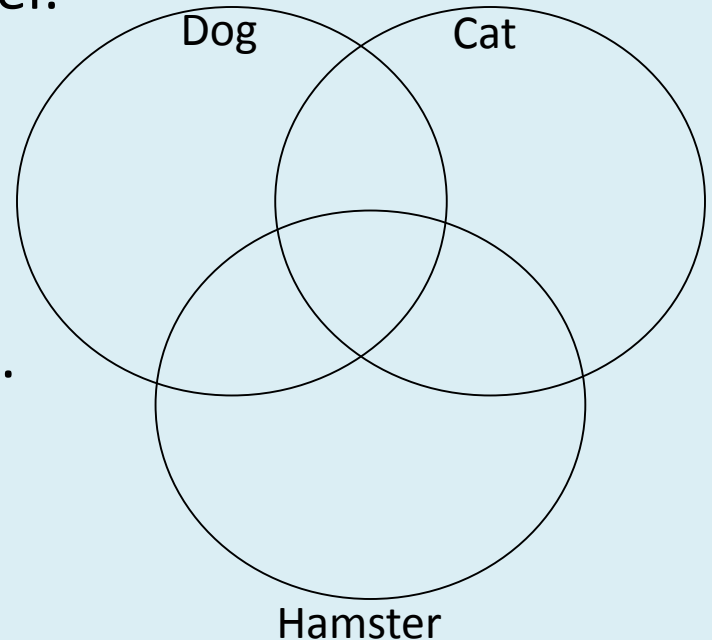


- 1. Your I-tunes card has enough for 3 of the 7 songs you want. In how many ways could you pick the songs?**
- 2. We use 10 digits in our number system. How many 4-digit “numbers” can be formed if no digits are repeated ? (Zero is allowed in any position)**
- 3. Confirm your answer to #2 using the Fundamental Counting Principle.**
- 4. Bad Frog Yogurt lets you pick 4 or fewer toppings from 40 choices and save 50 cents off of your order. How many ways can you get the savings?**
- 5. Create a tree diagram to show the sample space for flipping a coin four *times*.**
- 6. Using your answer to #5, what is the probability that all four “flips” are heads?**

Practice: on notebook paper!!

There are 100 people in an office.

- *5 people have a dog, a cat, and a hamster.
- *60 people own a dog.
- *13 people own a dog and a cat.
- *17 people own a dog and a hamster.
- *0 people own ONLY a hamster and a cat.
- *20 people own hamsters
- *31 people own a cat



1. Fill in the Venn diagram.
2. How many people in this office own no cats, dogs, or hamsters?
3. In how many ways can you create a bag by picking from 5 colors, 3 straps, and 7 buckles?
4. In how many ways can you rearrange the word GEOMETRY?
5. In how many ways can you select 6 puzzles from a set of 20?

Warm-up

Answers

1. Your I-tunes card has enough for 3 of the 7 songs you want. In how many ways could you pick the songs?

$${}_7C_3 = 35$$

2. We use 10 digits in our number system. How many 4-digit “numbers” can be formed if no digits are repeated ? (Zero is allowed in any position)

$${}_{10}P_4 = 5,040$$

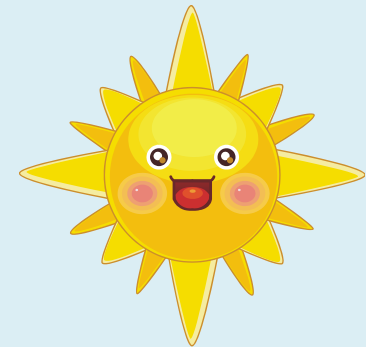
3. Confirm your answer to #2 using the Fundamental Counting Principle.

$$10 \times 9 \times 8 \times 7 = 5,040$$

4. Bad Frog Yogurt lets you pick 4 or fewer toppings from 40 choices and save 50 cents off of your order. How many ways can you get the savings?

$${}_{40}C_4 + {}_{40}C_3 + {}_{40}C_2 + {}_{40}C_1 + {}_{40}C_0 = 102,091$$

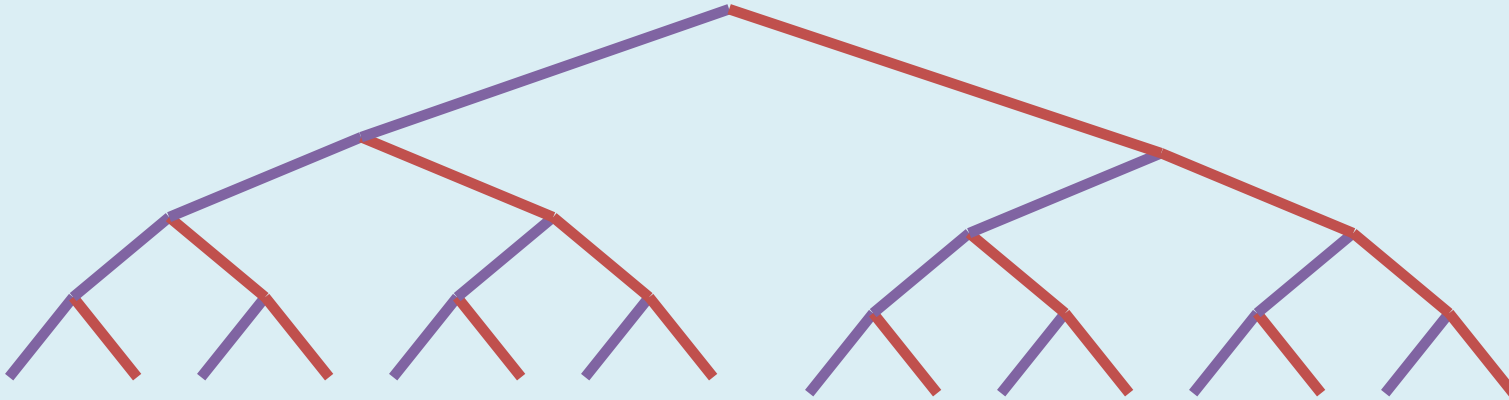
$$91,390 + 9,880 + 780 + 40 + 1 = 102,091$$



Warm-up

Answers

5. Create a tree diagram to show the sample space for flipping a coin four *times*.



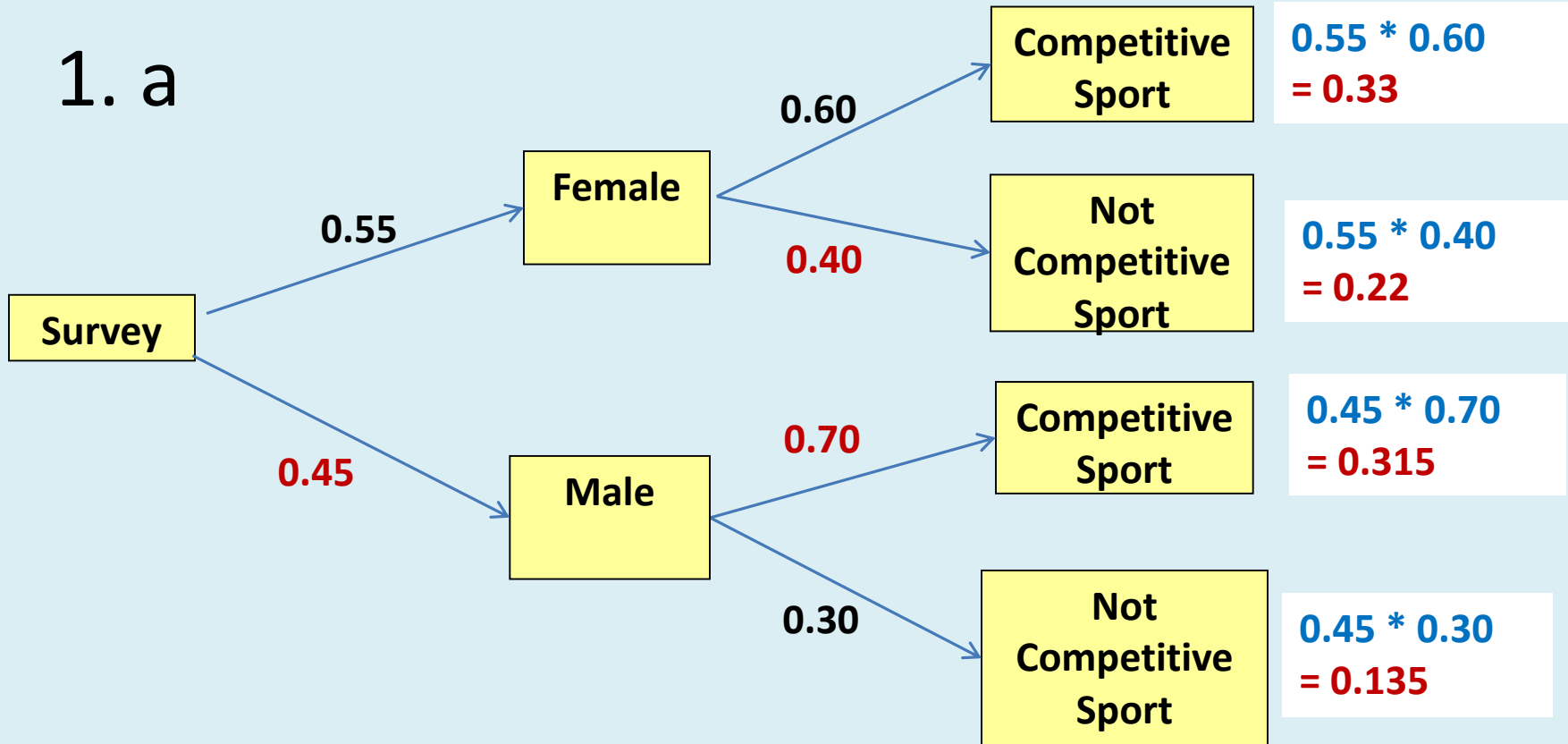
6. Using your answer to #5, what is the probability that all four “flips” are heads?

$$1/16 = 6.25\%$$



Homework Answers

1. a



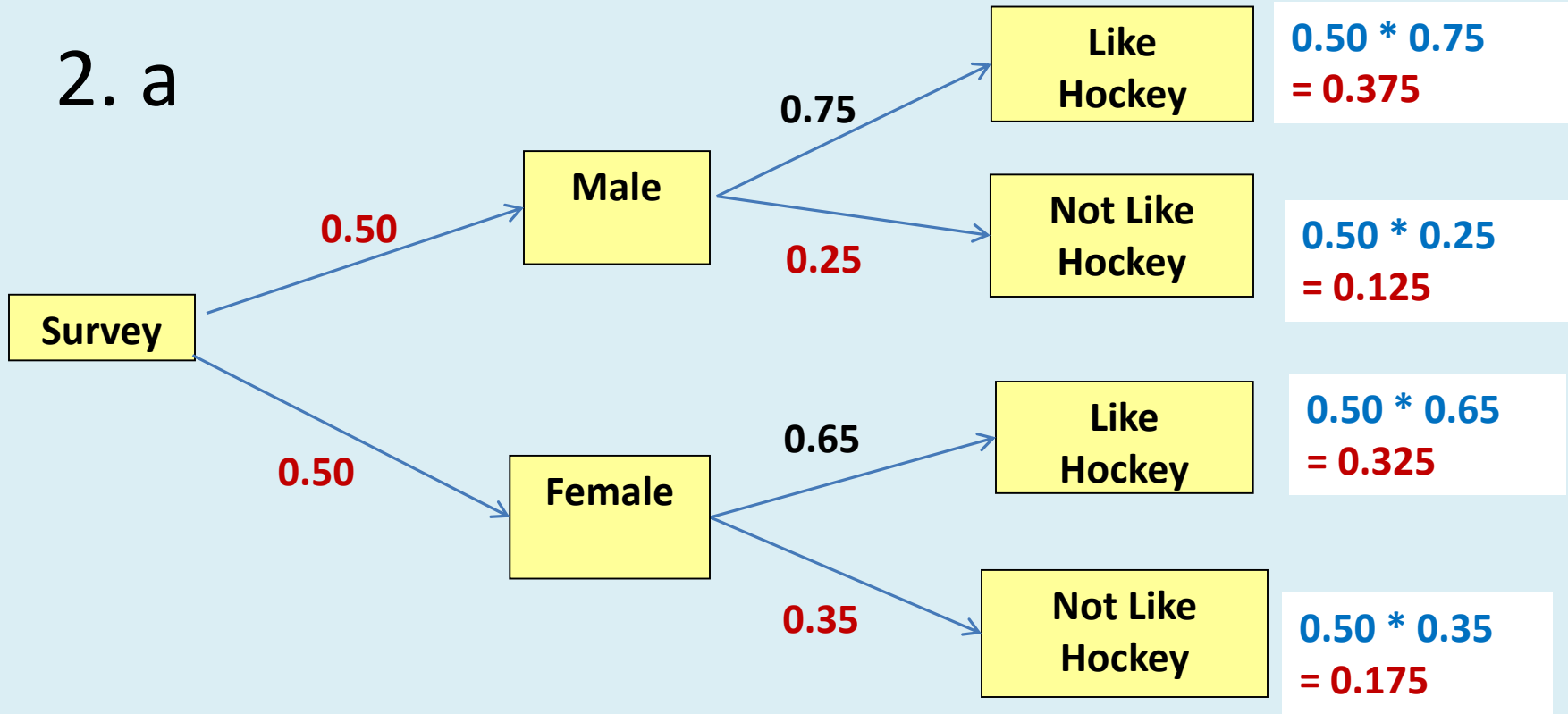
b. $(.55)(.60) = .33$ **33%**

c. $(.45)(.30) = .135$ **13.5%**

d. $(.55)(.6) + (.45)(.70) = 0.645$ **64.5%**

Homework Answers

2. a



b. $(.5)(.65) = 0.325$ **32.5%**

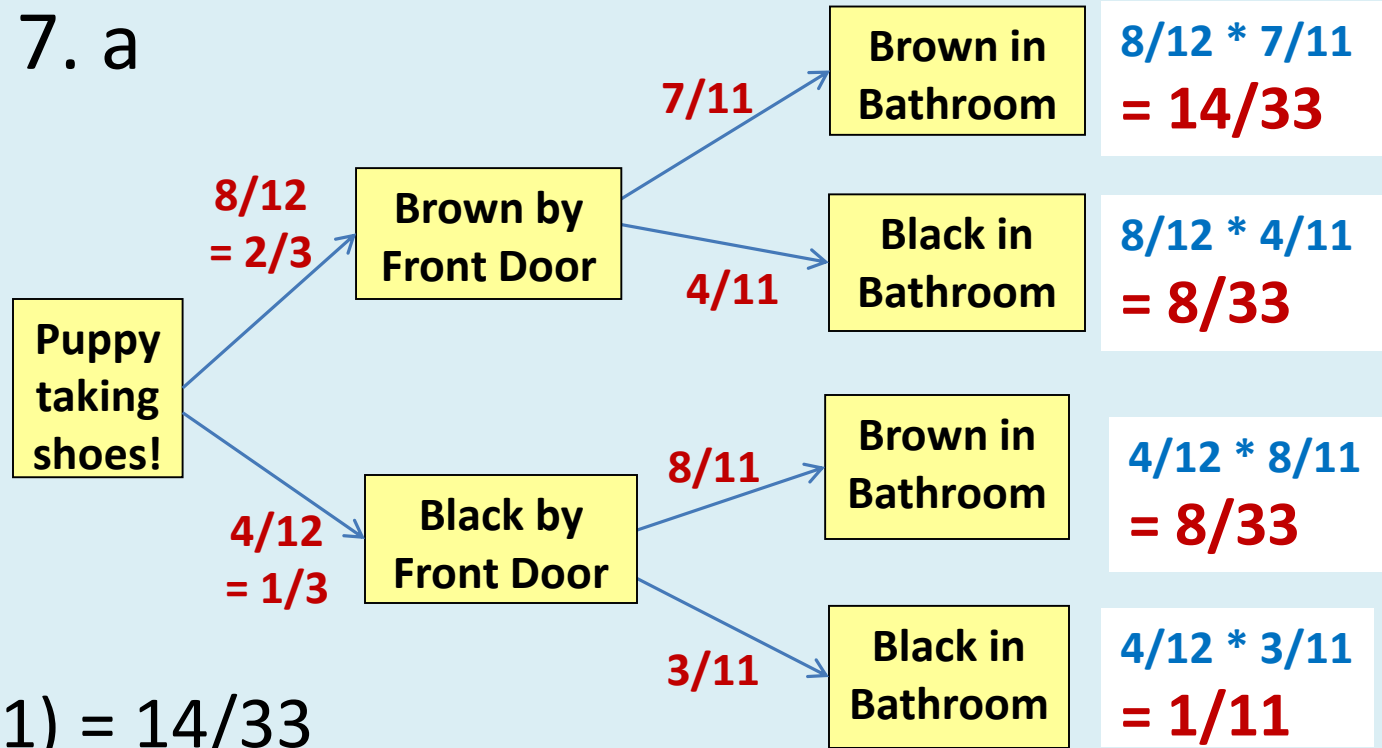
c. $(.5)(.25) + (.5)(.35) = 0.30$ **30%**

d. $(.5)(.25) = 0.125$ **12.5%**

Homework Answers

1. $4/9$
2. $2/9$
3. $7/48$
4. $1/20$
5. $1/6$
6. $1/221$

7. a



7. b. $(8/12)(7/11) = 14/33$

8. a. $(.5)(.14) = .07$ **7%**

b. $(.5)(.86) + (.5)(.83) = .845$ **84.5%**

c. $83/169 = 49.1%$

d. **83%**

	Male	Female
Right-handed	86	83
Left-handed	14	17
Total	100	100

HW Answers: Cumulative Review

1) $1/3, -1/2$

2) 3.8039

3) $m\angle SRQ = 140^\circ$

4) 74 units

5) a) $t = \frac{2400}{x}$ b) \$12 c) 96 students

6) a) $y = 1.10x^2 - 30.49x + 890.03$

b) 790.61 points

c) 1984, 2003

7) a) $3ky^4\sqrt[4]{3y^3}$

b) $3^{\frac{5}{4}}ky^{\frac{7}{4}}$

8) $\frac{-3 \pm \sqrt{3}}{2}$

TONIGHT'S HOMEWORK

Cumulative Review Handout

#10-15, 22-26

-> Write this on your outline 😊

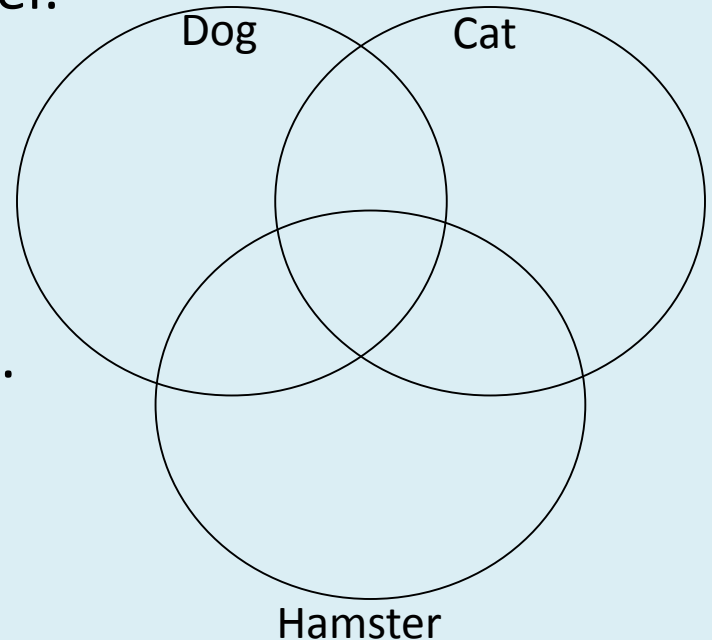
Try ALL the problems!! Look back at old notes, warm-ups, ppts, etc.

Keep studying formulas and vocabulary for the quiz and test!

Practice: on notebook paper!!

There are 100 people in an office.

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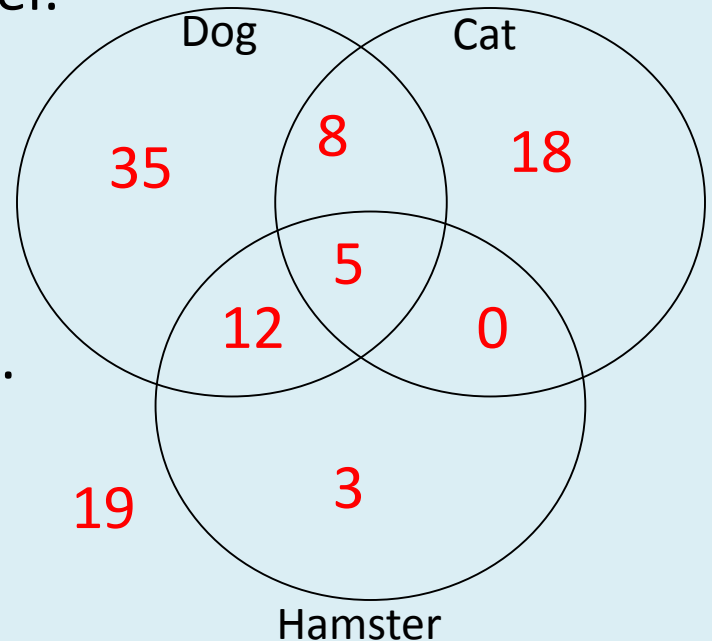


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1. Fill in the Venn diagram.

2. How many people in this office own no cats, dogs, or hamsters? **19**

3. In how many ways can you create a bag by picking from 5 colors, 3 straps, and 7 buckles?

$$5 \times 3 \times 7 = 105$$

$$8! = 20160$$

4. In how many ways can you rearrange the word GEOMETRY? **2!**

5. In how many ways can you select 6 puzzles from a set of 20?

$${}^{20}C_6 = 38760$$

Practice: Review for Quiz

1. You are creating a schedule for chores at camp this summer. Each day, you need a team to clean the kitchen, three teams to clean bathrooms, and two teams to clean floors. Only certain teams are trained for each task. In how many ways can you select the chores for the day from a set of 2 kitchen, 7 bathroom, and 8 floor cleaning groups?
2. In how many ways can you choose at most three problems from a set of eight problems to complete?
3. You have 5 red, 2 green, and 3 blue oven mitts. What is the probability that you select a pair of matching red oven mitts?
4. You have 5 red, 2 green, and 3 blue oven mitts. What is the probability that you select a red oven mitt, but then return it and select a blue one?
5. You are leading an art assignment in your class of 24 students. In how many ways can you display 4 art pieces in a row on the board?

Practice: Review for Quiz

1. You are creating a schedule for chores at camp this summer. Each day, you need a team to clean the kitchen, three teams to clean bathrooms, and two teams to clean floors. Only certain teams are trained for each task. In how many ways can you select the chores for the day from a set of 2 kitchen, 7 bathroom, and 8 floor cleaning groups?

$$\begin{array}{ccc} {}_2\mathbf{C}_1 & \bullet & {}_7\mathbf{C}_3 & \bullet & {}_8\mathbf{C}_2 & = & \mathbf{1,960} \\ \text{Kitchen} & & \text{Bathrooms} & & \text{Floors} & & \end{array}$$

Use counting principle because choose kitchen team, bathroom teams, and floor teams to make 1 overall cleaning team for the day.

2. In how many ways can you choose at most three problems from a set of eight problems to complete?

$${}_8\mathbf{C}_3 + {}_8\mathbf{C}_2 + {}_8\mathbf{C}_1 + {}_8\mathbf{C}_0 = \mathbf{93}$$

Combination because choosing a collection so order does not matter, and you can't repeat items.

Practice: Review for Quiz

3. You have 5 red, 2 green, and 3 blue oven mitts. What is the probability that you select a pair of matching red oven mitts?

$$\frac{5}{10} \cdot \frac{4}{9} = \frac{20}{90} = \frac{2}{9}$$

4. You have 5 red, 2 green, and 3 blue oven mitts. What is the probability that you select a red oven mitt, but then return it and select a blue one?

$$\frac{5}{10} \cdot \frac{3}{10} = \frac{15}{100} = \frac{3}{20}$$

5. You are leading an art assignment in your class of 24 students. In how many ways can you display 4 art pieces in a row on the board?

$${}_{24}P_4 = 255,024$$

Permutation because you are displaying them in a row, so there is an order, and you can't repeat items.

TONIGHT'S HOMEWORK

Cumulative Review Handout

#10-15, 22-26

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