

In a bowl of marbles, there are 10 red ones, 6 green ones, and 8 blue ones.

- $\frac{3}{4}$ or .75 1. If a marble is chosen at random from the bowl, find P(red one or a blue one)? $\frac{10}{24} + \frac{8}{24} = \frac{18}{24} = \frac{3}{4}$ or .75
- $\frac{5}{24}$ or .14 2. If two marbles are chosen at random with replacement, find P(red and a blue)? $\frac{10}{24} \cdot \frac{8}{24} = \frac{80}{576}$
- $\frac{15}{92}$ or .16 3. If two marbles are chosen at random without replacement, find P(they are both red)? $\frac{10}{24} \cdot \frac{9}{23} = \frac{90}{552}$

A person rolls two dice, one after the other.

- $\frac{11}{18}$ or .61 4. P(even sum) or P(sum of 9) $\frac{18}{36} + \frac{4}{36} = \frac{22}{36} = \frac{11}{18}$
- $\frac{11}{18}$ or .61 5. P(odd sum) or P(sum less than 5) $\frac{18}{36} + \frac{6}{36} - \frac{2}{36} = \frac{22}{36} = \frac{11}{18}$
- $\frac{5}{11}$ or .45 6. What is the probability that the sum of two rolls is an even number **given** at least one of the rolls is a 4?

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

A card is chosen from a standard deck of cards. The drawer is looking for clubs and face cards.

	Club	Not a Club	Total
Face card	3	9	12
Not a face card	10	30	40
Total	13	39	52

- $\frac{13}{52} = \frac{1}{4}$ 7. Find P(Club) $\frac{13}{52}$
- $\frac{1}{4}$ or .25 8. Find P(Club | Not a Face Card) $\frac{10}{40} = \frac{1}{4}$
- $\frac{3}{52}$ or .06 9. Find P(Club \cap Face Card)
- $\frac{49}{52}$ or .94 10. Find P(Not a Club \cup Not a Face Card) $\frac{39}{52} + \frac{40}{52} - \frac{30}{52} = \frac{49}{52}$
- Yes 11. Are the events Club and Not a Face Card Independent of each other?
 $P(\text{club}) = .25$ $P(\text{not a face card}) = .77$ $P(\text{club} \cap \text{Not a Face card}) = .19$ $.25 \times .77 = .19$ ✓

- $\frac{21}{32}$ or .66 12. In a Coordinate Algebra class, 22 students were male and 10 students were female. Out of those students, 11 of the guys and 4 of the girls passed the EOCT. If a person is chosen at random from the class, what is the probability of choosing a girl or a person that did NOT pass the EOCT?

$$\frac{10}{32} + \frac{17}{32} - \frac{6}{32} = \frac{21}{32}$$

	Pass	Not Pass	Total
Male	11	11	22
Female	4	6	10
	15	17	32

Directions: Use the given sets to answer each question.

$$U = \{3, 7, 11, 12, 15, 18, 20, 22, 24, 25\}$$

$$A = \{11, 18, 24, 25\}$$

$$B = \{\text{prime numbers}\} \{3, 7, 11\}$$

$$C = \{3, 7, 12, 18, 20, 24\}$$

13) $A \cup C = \{3, 7, 11, 12, 18, 20, 24, 25\}$ 14) $B \cap C = \{3, 7\}$

15) $(A \cap C) \cup B = \{3, 7, 11, 18, 24\}$

16) $(B \cup C) = \{3, 7, 11, 12, 18, 20, 24\}$
 $(B \cup C)' = \{15, 22, 25\}$

17) $B - C = \{11\}$

18) $C - B = \{12, 18, 20, 24\}$

In a survey of 450 people, 200 of whom are female; it was found that 225 prefer chocolate ice cream including 99 males. Use this information to complete the table below.

	Males	Females	Total
Vanilla	151	74	225
Chocolate	99	126	225
Total	250	200	450

$\frac{1}{2}$ or .5 19. The person likes chocolate. $\frac{225}{450} = \frac{1}{2}$

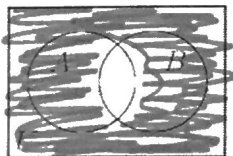
$\frac{151}{250}$ or .60 20. The person like vanilla, given they are male. $\frac{151}{250}$

$\frac{351}{450}$ or .78 21. The person likes vanilla or is a female. $\frac{225}{450} + \frac{200}{450} - \frac{74}{450} = \frac{351}{450}$

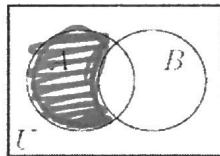
NO 22. Are being a male and liking chocolate independent events? $.55 \times .5 \neq .22$
 $P(\text{male}) = .55$ $P(\text{choc}) = .5$ $P(\text{male} \cap \text{choc}) = .22$ NO

Directions: Shade the regions that represent the following sets.

23) $(A \cap B)'$



24) $A - B$



$\frac{3}{51}$ or .02 25. What is the P(getting a pair of Ace's from a deck of cards | one Ace)?
 -you already have 1 ace, so 3 are left in the deck.

$\frac{1}{8}$ or .125 26. What is the probability of flipping a coin three times and getting heads all three times?

$$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$$

$\frac{1}{60}$ or .02 27. What is the probability of getting a sum of 4 on a pair of dices and selecting the letter G from GABEL?

$$\frac{3}{36} \cdot \frac{1}{5} = \frac{3}{180} = \frac{1}{60}$$