

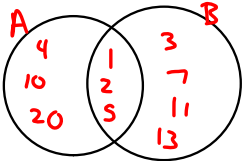
Venn Diagrams - Organizing Data into Tables

Dec 18-9:57 PM

Create a Venn diagram for events A and B.

A: Factors of 20 {~~1~~, 2, ~~4~~, ~~5~~, ~~10~~, ~~20~~}

B: Prime numbers less than 15 {~~1~~, 2, ~~3~~, ~~4~~, ~~5~~, ~~6~~, ~~7~~, ~~8~~, ~~9~~, ~~10~~, ~~11~~, ~~12~~, ~~13~~, ~~14~~}



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U : union - (an inclusive **OR**)
Cat U Dog = 14 people
Inclusive (Both is also include)

\cap : intersection (AND)
Cat \cap Dog = 3 people

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Answer questions based on the diagram.

1) Describe **A U B** = {1, 2, 3, 4, 5, 7, 10, 11, 13, 20}

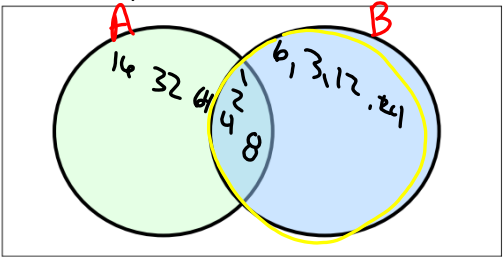
2) Describe **A \cap B** = {1, 2, 5}

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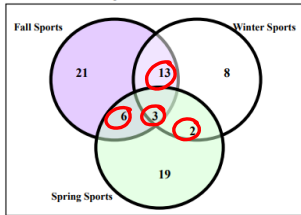
Handout: Organize data into circles - complete top half.

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Organize the data into the circles.
A Factors of 64: 1, 2, 4, 8, 16, 32, 64
B Factors of 24: 1, 3, 4, 6, 8, 12, 24



Dec 19-7:33 AM



- 1) How many students play sports year-round? **3**
- 2) a) How many students play sports in the spring and fall? **9** b) ...in only spring & fall? **6**
- 3) a) How many students play sports in the winter and fall? **16** b) ...in only winter & fall? **8**
- 4) a) How many students play sports in the winter and spring? **5** b) ...in only spring & spring? **2**
- 5) How many students play only one sport? **21 + 19 + 8 = 48**
- 6) How many students play at least two sports? **24**

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Back: #7 together.

7) Suppose you have a standard deck of 52 cards. Let:

 A : draw a 7 B : draw a Diamonda. Describe $A \cup B$ for this experiment, and find the probability of $A \cup B$.

$$P(A \cup B) = \frac{3}{52} + \frac{1}{52} + \frac{12}{52} = \frac{16}{52} = \frac{4}{13}$$

b. Describe $A \cap B$ for this experiment, and find the probability of $A \cap B$.

$$P(A \cap B) = \frac{1}{52}$$

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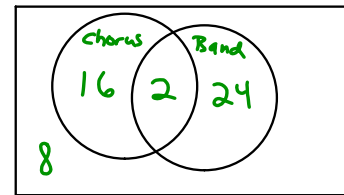
8) Suppose a box contains three balls, one red, one blue, and one white. One ball is selected, its color is observed, and then the ball is placed back in the box. The balls are scrambled, and again, a ball is selected and its color is observed. What is the sample space of the experiment?

R B W

Tree Diagram

{RR, RB, RW, BR, BB, BW, WR, WB, WW}

1. In a class of 50 students, 18 take Chorus, 26 take Band, and 2 take both Chorus and Band. How many students in the class are not enrolled in either Chorus or Band?

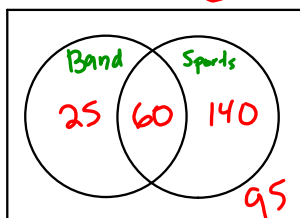


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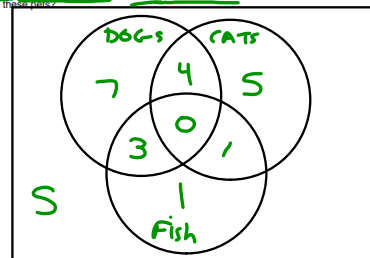
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2. In a school of 320 students, 85 students are in the band, 200 students are on sports teams, and 60 students participate in both activities. How many students are involved in either Band or sports?



$$\begin{aligned} \text{Band} \cup \text{Sports} &= 25 + 60 + 140 \\ &= 225 \end{aligned}$$

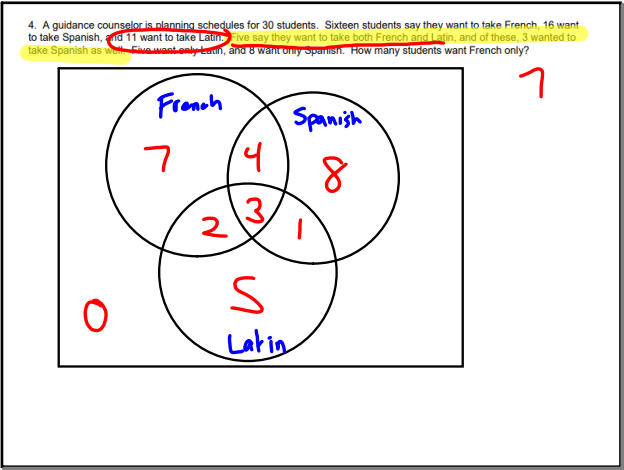
3. A veterinarian surveys 26 of his patrons. He discovers that 14 have dogs, 10 have cats, and 5 have fish. Four have dogs and cats, 3 have dogs and fish, and one has a cat and fish. If no one has all three kinds of pets, how many patrons have none of these pets?



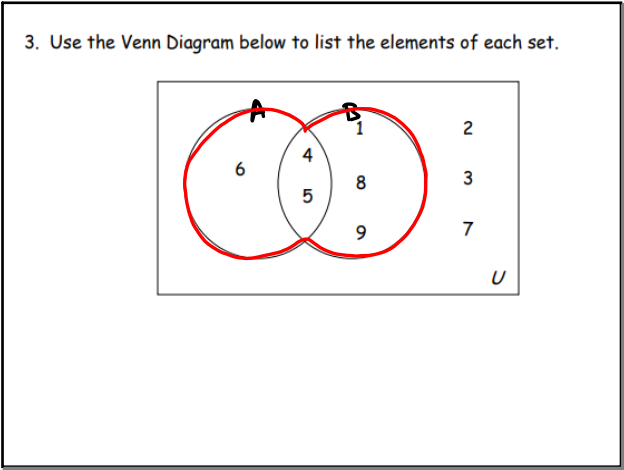
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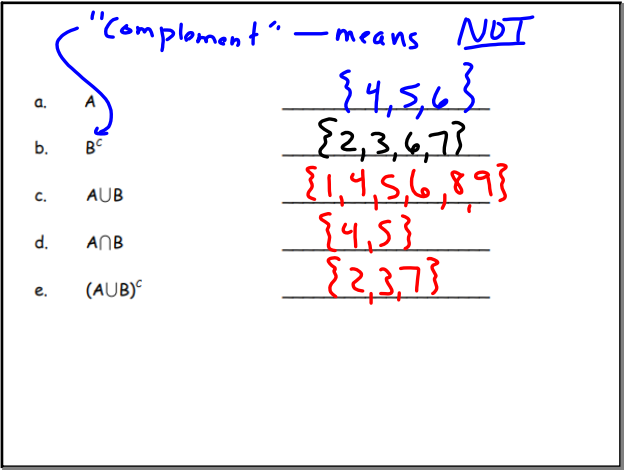
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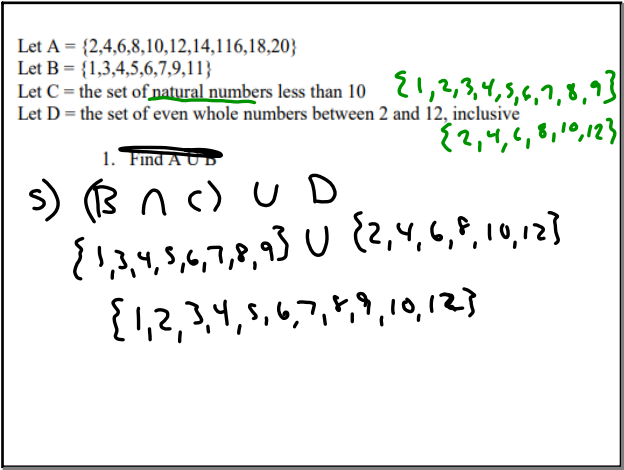
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