

1. The gaming club must decide when and where to meet. The possible days are **Monday, Tuesday, and Wednesday**. The possible times are **3:00 or 3:30**. There are **four different classrooms** available to meet in. How many possible outcomes are there?

$$3 \cdot 2 \cdot 4 = 24 \text{ outcomes}$$

2. You flip a coin **five** times. You could get **heads or tails** each time. How many possible outcomes are there?

$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32 \text{ outcomes}$$

3. There are **six** students selected to sit in the front row of your class. How many different ways could your teacher arrange the order of these students from left to right?

$$6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 720 \text{ arrangements}$$

Set A = {whole numbers 30 through 60} $A = \{30, 31, 32, 33, 34, 35, \dots, 55, 56, 57, 58, 59, 60\}$

4. List the subset B {multiples of 2} $\{30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60\}$
5. List the subset C {multiples of 5} $\{30, 35, 40, 45, 50, 55, 60\}$
6. List the elements that are in both subsets B and C. $\{30, 40, 50, 60\}$

State whether the following statement is true or false.

7. {apple, pecan, cherry} \subset {types of pies} **True**

Give another example of a subset.

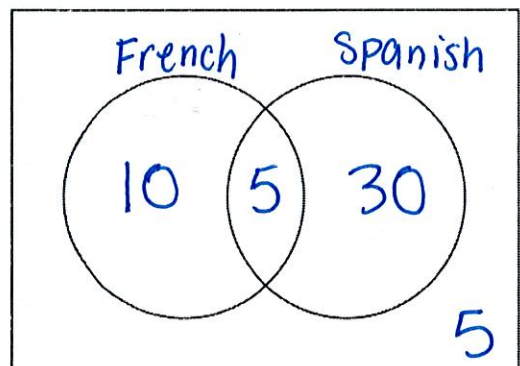
8. Your math teacher surveyed 50 students.

Fifteen students were taking French

35 were taking Spanish.

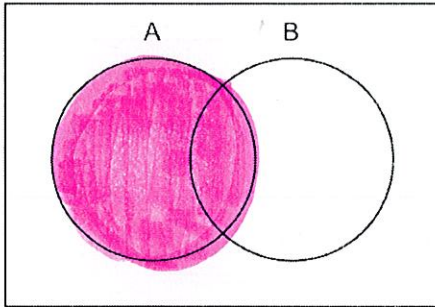
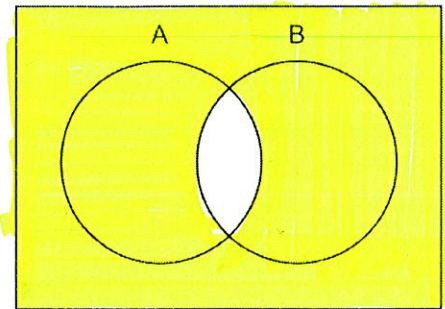
5 of the students were taking both.

Fill in the Venn Diagram to represent this situation.



Shade the given set.

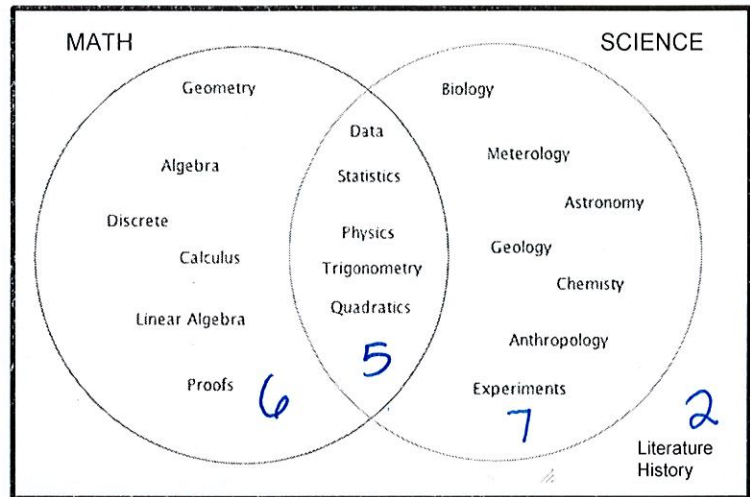
9. A

10. $\overline{(A \cap B)}$ 

11. What is $P(M \cap S)$? $\frac{5}{20} = \frac{1}{4}$

12. What is $P(S')$? $\frac{8}{20} = \frac{2}{5}$

13. What is $P(M \cup S)$? $\frac{18}{20} = \frac{9}{10}$



14. You roll a fair six-sided die. What is the probability that the die shows an odd number or a number less than 5. **P(odd or less than five)?**

$$\frac{3}{6} + \frac{4}{6} - \frac{2}{6} = \frac{5}{6}$$

A person selects a card from a deck. Find the probability of the following events.

15. P(Red Card or Queen) $\frac{26}{52} + \frac{4}{52} - \frac{2}{52} = \frac{28}{52} = \frac{7}{13}$

16. P(Spade or Face Card) $\frac{13}{52} + \frac{12}{52} - \frac{3}{52} = \frac{22}{52} = \frac{11}{26}$

17. P(a 7 or an Even Card) $\frac{4}{52} + \frac{20}{52} - \frac{0}{52} = \frac{24}{52} = \frac{6}{13}$

18. P(an Ace or a King) $\frac{4}{52} + \frac{4}{52} - \frac{0}{52} = \frac{8}{52} = \frac{2}{13}$

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$