

1. Find 32% of 4000.
2. 36 is what fraction of 90?
3. $\frac{3}{5}$ of a number is 72. Find this number.
4. Given that $A = \{1, 2, 3, 4, 5\}$, $A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8\}$ and $A \cap B = \{2, 4\}$.
 - (a) List the numbers between 1 and 8 that the set B must contain. Explain why these must be contained by B .
 - (b) List the numbers between 1 and 8 that the set B must not contain. Explain your answer.
5. How many different four-digit numbers are there if
 - (a) repetition of digits is allowed.
 - (b) repetition of digits is not allowed.
6. Find $n(S)$ if we know that $n(T) = 8$, $n(T \cup S) = 17$, and $n(T \cap S) = 5$.
7. There are 4 students competing in the final round of a championship. At the end, the contestants will be ranked first, second, third, and fourth place. How many different outcomes are possible?
8. We throw a die twice. How many different outcomes are possible? (One example of an outcome is: first roll is a 2 and the second roll is a 5).
9. We pull two cards from $\{1, 2, 3, 4, 5\}$. There is no replacement, i.e. after we pulled the first card, we do not put it back. List all possible outcomes if
 - (a) The order of the numbers pulled matters, i.e. pulling first 3, then pulling 5 is counted as a separate outcome from pulling first 3 and then pulling 5.
 - (b) The order of the numbers pulled does not matter, i.e. pulling first 3, then pulling 5 is counted as the same outcome as pulling first 3 and then pulling 5.
10. We throw a coin five times in a row. (The outcomes are only head and tails, no sideways!)
 - (a) How many different outcomes are possible?
 - (b) How many different outcomes will contain four heads and one tails?
11. The supplement of an angle is 5° less than four times the angle. Find the angle.
12. The sides of a rectangle are 8 ft and 12 ft long.
 - (a) Find the perimeter of the rectangle. Include units in your computation and answer.
 - (b) Find the area of the rectangle. Include units in your computation and answer.
13. True or false?
 - (a) If $A \subseteq B$, then $A \cup B = A$.
 - (b) If $A \subseteq B$, then $A \cap B = A$.
 - (c) $A \cup A' = U$