

**Topic : Probability of a Complement of an Event- Worksheet 3****Do the following:**

1. You roll four die. What is the probability that 3 will not appear on the die?

$$P(\text{not } 3, \text{ not } 3, \text{ not } 3, \text{ not } 3) = P(\text{not } 3) \times P(\text{not } 3) \times P(\text{not } 3) \times P(\text{not } 3)$$

$$= \frac{5}{6} \times \frac{5}{6} \times \frac{5}{6} \times \frac{5}{6}$$

$$= \frac{625}{1296} = 0.482$$

3. Ronny and Monee are playing cricket. Probability of Ronny winning the cricket game is .55.

So what is the probability of

Monee winning?  $P(\text{not Ronny}) = 1 - 0.55$   
 $= 0.45$

2. Three 6-sided dies are rolled. What is the probability of rolling a number that is not an odd number?  $P(\text{not odd}) = 0.5$  or  $\frac{1}{2}$

$$P(\text{not odd, not odd, not odd})$$

$$= P(\text{not odd}) \times P(\text{not odd}) \times P(\text{not odd})$$

$$= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8} = 0.125$$

4. A woman chooses an item at random from 20 suits and 14 skirts. What is the probability that the woman chooses an item that is not a suit?

$$P(\text{not suit}) = \frac{14}{34}$$

20 suits  
14 skirts  
34 total

$$= \frac{7}{17}$$

5. A box contains 5 blue, 7 black, and 10 red pens. If ten pens are chosen at random from the box, what is the probability that it is not red?  $P(\text{not red})$

$$= \frac{12}{22}$$

$$= \frac{6}{11}$$

5 Blue  
7 Black  
10 Red  
22 total

6. A number from 10 to 25 is chosen at random. What is the probability that the number chosen is not even? 10-25 - 16 numbers

$$P(\text{not even}) = \frac{8}{16}$$

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

7. If three 6-sided dies are rolled, what is the probability of rolling a number that is not 2 or 4?

$$P(\text{not 2 or 4}) = \frac{4}{6} = \frac{2}{3}$$

$$\frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} = \frac{8}{27}$$

8. A single card is chosen at random from a standard deck of 52 playing cards. What is the probability of choosing a card that is not a black card?

$$P(\text{not black}) = \frac{26}{52}$$

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

9. You roll two dies numbered from 1 to 6. What is the probability that the sum is not 6?

$$P(\text{not 6 sum})$$

$$= \frac{31}{36}$$

|   |   |
|---|---|
| 1 | 5 |
| 2 | 4 |
| 3 | 3 |
| 4 | 2 |
| 5 | 1 |

$P_{6 \text{ sum}} = 5$

Total 36

10. There are 25 stones in a jar and 15 of them are brown. If a stone is chosen at random, what is the probability that it will not be brown?

$$P(\text{not brown}) = \frac{10}{25}$$

$$= \frac{2}{5}$$

15 brown  
25 total  
10 not brown

