

Compound Probabilities Extra Practice

Find the following probabilities:

M&Ms come in these color distributions:

Orange: $\frac{3}{20}$ Green: $\frac{1}{10}$ Red: $\frac{1}{5}$ Yellow: $\frac{1}{5}$ Brown: $\frac{3}{10}$ Blue: $\frac{1}{20}$

1. Randomly choosing orange or blue?

2. Choosing NOT blue?

3. Choosing red or green?

The probability of weather on July 4th is- Thunder: $\frac{1}{20}$ Rain: $\frac{1}{10}$

4. Probability that it will either rain or thunder on July 4th?

5. Drawing a 10 or a 2 from a standard deck of 52 playing cards?

6. Drawing a diamond from a standard deck of 52 playing cards?

These are the ages of Senators from 1989:

AGE	<40	40-49	50-59	60-69	70-79	>80
# SEN.	5	30	36	22	5	2

7. Randomly choosing a senator under 40 years old.

8. Choosing a senator in their 40s or 50s.

9. Choosing a senator at least 60 years old.

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1. Randomly choosing orange or blue?

$$\frac{3}{20} + \frac{1}{20} = \frac{4}{20} \div 4 = \boxed{\frac{1}{5}}$$

2. Choosing NOT blue?

$$\frac{3}{20} + \frac{1}{10} + \frac{1}{5} + \frac{1}{5} + \frac{3}{10} = \frac{3}{20} + \frac{2}{20} + \frac{4}{20} + \frac{4}{20} + \frac{6}{20} = \boxed{\frac{19}{20}}$$

$$\text{OR } \frac{20}{20} - \frac{1}{20} = \boxed{\frac{19}{20}}$$

3. Choosing red or green?

$$\frac{1}{5} + \frac{1}{10} = \frac{2}{10} + \frac{1}{10} = \boxed{\frac{3}{10}}$$

The probability of weather on July 4th is- Thunder: $\frac{1}{20}$ Rain: $\frac{1}{10}$

4. Probability that it will either rain or thunder on July 4th?

$$\frac{1}{20} + \frac{1}{10} = \frac{1}{20} + \frac{2}{20} = \boxed{\frac{3}{20}}$$

5. Drawing a 10 or a 2 from a standard deck of 52 playing cards? (There are 4 10's & 4 2's)

$$\frac{4}{52} + \frac{4}{52} = \frac{8}{52} \div 4 = \boxed{\frac{2}{13}}$$

6. Drawing a diamond from a standard deck of 52 playing cards? (There are 13 Diamond cards)

$$\frac{13}{52} \div 13 = \boxed{\frac{1}{4}}$$

These are the ages of Senators from 1989:

AGE	<40	40-49	50-59	60-69	70-79	>80
# SEN.	5	30	36	22	5	2

← Total 100

7. Randomly choosing a senator under 40 years old.

$$\frac{5}{100} = \boxed{\frac{1}{20}}$$

8. Choosing a senator in their 40s or 50s.

$$\frac{30}{100} + \frac{36}{100} = \frac{66}{100} \div 2 = \boxed{\frac{33}{50}}$$

9. Choosing a senator at least 60 years old.

$$\frac{22}{100} + \frac{5}{100} + \frac{2}{100} = \boxed{\frac{29}{100}}$$