

1. There are 2 red Kings in a pack of 52 cards.

$$\text{Probability} = \frac{2}{52} = \frac{1}{26}$$

Answer: B

2. Possible outcomes: HHH, HHT, HTH, THH, HTT, THT, TTH, TTT. Favorable outcomes: HTT, THT, TTH.

$$\text{Probability} = \frac{3}{8}$$

Answer: C

3. Two-digit numbers range from 10 to 90, totaling 81 numbers.

$$\text{Probability} = \frac{81}{90} = \frac{9}{10}$$

Answer: C

- 4.

$$\text{Probability} = \frac{58}{200} = \frac{29}{100}$$

Answer: B

5. Total number of balls is $3 + 5 + 4 = 12$. Number of non-red balls is $5 + 4 = 9$.

$$\text{Probability} = \frac{9}{12} = \frac{3}{4}$$

Answer: B

- 6.

$$P(\text{not } E) = 1 - P(E) = 1 - 0.65 = 0.35$$

Answer: A

7. Numbers less than 5 are 1, 2, 3, and 4.

$$\text{Probability} = \frac{4}{6} = \frac{2}{3}$$

Answer: C

8. There are 26 letters in the English alphabet, with 5 vowels (A, E, I, O, U). Number of consonants is $26 - 5 = 21$.

$$\text{Probability} = \frac{21}{26}$$

Answer: B

9. Numbers whose squares are less than or equal to 1 are -1, 0, and 1.

$$\text{Probability} = \frac{3}{7}$$

Answer: A

10. Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24. Multiples of 5: 5, 10, 15, 20, 25. Common multiples: 15. Total unique multiples: $8 + 5 - 1 = 12$.

$$\text{Probability} = \frac{12}{25}$$

Answer: A

11. Number of boys is $40 - 25 = 15$.

$$\text{Probability} = \frac{15}{40} = \frac{3}{8}$$

Answer: A

12. Prime numbers less than 20 are 2, 3, 5, 7, 11, 13, 17, 19.

$$\text{Probability} = \frac{8}{100} = \frac{2}{25}$$

Note: The options provided do not match the calculated answer. The correct probability is $\frac{8}{100} = \frac{2}{25}$.

13. A leap year has 366 days, which is 52 weeks and 2 extra days. The probability that these extra days are Monday and Tuesday is:

$$\text{Probability} = \frac{2}{7}$$

Answer: B

14. The probability of an event that is sure to happen is 1. **Answer:** C

15. Favorable outcomes: (2,6), (3,4), (4,3), (6,2).

$$\text{Probability} = \frac{4}{36} = \frac{1}{9}$$

Answer: A