Solving Problems Involving Probability of Simple Events

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Practice

1. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine that it is a red number card.

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n(red number card) = 18

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n(red number card) = 18
n(S) = 52

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n(red number card) = 18
n(S) = 52

$$P(\text{red number card}) = \frac{\text{n(red number card)}}{\text{n(S)}}$$

Practice

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n(red number card) = 18
n(S) = 52

$$P(\text{red number card}) = \frac{\text{n(red number card)}}{\text{n(S)}}$$

$$P(\text{red number card}) = \frac{18}{52}$$

Practice

1. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine that it is a red number card.

n(red number card) = 18
n(S) = 52

$$P(\text{red number card}) = \frac{\text{n(red number card)}}{\text{n(S)}}$$

$$P(\text{red number card}) = \frac{18}{52}$$

$$P(\text{red number card}) = \frac{9}{26}$$

Practice

2. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine that it is a black ace.

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n(black ace) = 2

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n(black ace) = 2
n(S) = 52

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n(black ace) = 2
n(S) = 52

$$P(\text{black ace}) = \frac{\text{n(black ace)}}{\text{n(S)}}$$

Practice

2. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine that it is a black ace.

n(black ace) = 2
n(S) = 52

$$P(\text{black ace}) = \frac{\text{n(black ace)}}{\text{n(S)}}$$

$$P(\text{black ace}) = \frac{2}{52}$$

Practice

2. A 52-card pack is well shuffled and then one card is drawn from the top of the pack. Determine that it is a black ace.

n(black ace) = 2
n(S) = 52

$$P(\text{black ace}) = \frac{\text{n(black ace)}}{\text{n(S)}}$$

$$P(\text{black ace}) = \frac{2}{52}$$

$$P(\text{black ace}) = \frac{1}{26}$$

Practice

3. A pair of coin is tossed. What is the probability of getting two tails?

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n(two tails) = 1

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n(two tails) = 1
n(S) = 4

Practice

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n(two tails) = 1
n(S) = 4

$$P(\text{two tails}) = \frac{\text{n(two tails)}}{\text{n(S)}}$$

Practice

3. A pair of coin is tossed. What is the probability of getting two tails?

n(two tails) = 1
n(S) = 4

$$P(\text{two tails}) = \frac{\text{n(two tails)}}{\text{n(S)}}$$

$$P(\text{two tails}) = \frac{1}{4}$$

Practice

4. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two heads?

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Frequency	164	112	124

What is the probability of getting two heads?

$$P(\text{two heads}) = \frac{f}{\sum f}$$

Practice

4. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two heads?

$$P(\text{two heads}) = \frac{f}{\sum f} = \frac{164}{400}$$

Practice

4. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two heads?

$$P(\text{two heads}) = \frac{f}{\sum f} = \frac{164}{400}$$

$$P(\text{two heads}) = \frac{41}{100}$$

Practice

5. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two tails?

Practice

5. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two tails?

$$P(\text{two tails}) = \frac{f}{\sum f}$$

Practice

5. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two tails?

$$P(\text{two tails}) = \frac{f}{\sum f} = \frac{112}{400}$$

Practice

5. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting two tails?

$$P(\text{two tails}) = \frac{f}{\sum f} = \frac{112}{400}$$

$$P(\text{two tails}) = \frac{7}{25}$$

Practice

6. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting a head and a tail?

Practice

6. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting a head and a tail?

$$P(\text{a head and a tail}) = \frac{f}{\sum f}$$

Practice

6. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting a head and a tail?

$$P(\text{a head and a tail}) = \frac{f}{\sum f} = \frac{124}{400}$$

Practice

6. A pair of coin is tossed 400 times and the results are:

Result	Two heads	Two tails	A head and a tail
Frequency	164	112	124

What is the probability of getting a head and a tail?

$$P(\text{a head and a tail}) = \frac{f}{\sum f} = \frac{124}{400}$$

$$P(\text{a head and a tail}) = \frac{31}{100}$$

Practice

7. A coin was tossed 100 times. It fell on tails 48 times. What is the probability that a tail shows up?

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$$P(tail) = \frac{f}{\sum f}$$

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$$P(tail) = \frac{f}{\sum f}$$

$$P(tail) = \frac{48}{100}$$

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$$P(tail) = \frac{f}{\sum f}$$

$$P(tail) = \frac{48}{100}$$

$$P(tail) = \frac{12}{25}$$

Practice

8. A coin was tossed 100 times. It fell on tails 48 times. What is the probability that a head shows up?

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Practice

8. A coin was tossed 100 times. It fell on tails 48 times. What is the probability that a head shows up?

$$P(head) = \frac{f}{\sum f}$$

$$P(head) = \frac{52}{100}$$

Practice

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$$P(head) = \frac{f}{\sum f}$$

$$P(head) = \frac{52}{100}$$

$$P(head) = \frac{13}{25}$$

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9. Earl Darenz is asked to choose a day from a week. What is the probability of choosing a day which starts with S?

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n(starts with S) = 2

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n(starts with S) = 2
n(S) = 7

Practice

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n(starts with S) = 2
n(S) = 7

$$P(\text{starts with S}) = \frac{\text{n(starts with S)}}{\text{n(S)}}$$

Practice

9. Earl Darenz is asked to choose a day from a week. What is the probability of choosing a day which starts with S?

n(starts with S) = 2
n(S) = 7

$$P(\text{starts with S}) = \frac{\text{n(starts with S)}}{\text{n(S)}}$$

$$P(\text{starts with S}) = \frac{2}{7}$$

Practice

10. Choosing a month from a year, what is the probability of selecting a month with 31 days?

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n(31 days) = 7

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n(31 days) = 7
n(S) = 12

Practice

10. Choosing a month from a year, what is the probability of selecting a month with 31 days?

n(31 days) = 7
n(S) = 12

$$P(\text{31 days}) = \frac{\text{n(31 days)}}{\text{n(S)}}$$

Practice

10. Choosing a month from a year, what is the probability of selecting a month with 31 days?

n(31 days) = 7
n(S) = 12

$$P(\text{31 days}) = \frac{\text{n(31 days)}}{\text{n(S)}}$$

$$P(\text{31 days}) = \frac{7}{12}$$

Practice

11. If a letter is chosen at random from the word PERSEVERANCE, what is the probability that the letter chosen is E?

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n(E) = 4

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n(E) = 4
n(S) = 12

Practice

11. If a letter is chosen at random from the word PERSEVERANCE, what is the probability that the letter chosen is E?

n(E) = 4
n(S) = 12
$P(\text{E}) = \dfrac{\text{n(E)}}{\text{n(S)}}$

Practice

11. If a letter is chosen at random from the word PERSEVERANCE, what is the probability that the letter chosen is E?

n(E) = 4
n(S) = 12

$$P(\text{E}) = \frac{\text{n(E)}}{\text{n(S)}}$$

$$P(\text{E}) = \frac{4}{12}$$

Practice

11. If a letter is chosen at random from the word PERSEVERANCE, what is the probability that the letter chosen is E?

n(E) = 4
n(S) = 12

$$P(\text{E}) = \frac{\text{n(E)}}{\text{n(S)}}$$

$$P(\text{E}) = \frac{4}{12} = \frac{1}{3}$$

Practice

12. If one letter is chosen at random from the word TRUSTWORTHY, what is the probability that the letter chosen is a consonant?

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n(consonant) = 9

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n(consonant) = 9
n(S) = 11

Practice

12. If one letter is chosen at random from the word TRUSTWORTHY, what is the probability that the letter chosen is a consonant?

n(consonant) = 9
n(S) = 11

$$P(\text{consonant}) = \frac{\text{n(consonant)}}{\text{n(S)}}$$

Practice

12. If one letter is chosen at random from the word TRUSTWORTHY, what is the probability that the letter chosen is a consonant?

n(consonant) = 9
n(S) = 11

$$P(\text{consonant}) = \frac{\text{n(consonant)}}{\text{n(S)}}$$

$$P(\text{consonant}) = \frac{9}{11}$$

Practice

13. The sides of a cube are numbered 11 to 16. If Jan Renz rolled the cube once, what is the probability of rolling a composite number?

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n(composite) = 4
n(S) = 6

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n(composite) = 4
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$$P(\text{composite}) = \frac{\text{n(composite)}}{\text{n(S)}}$$

Practice

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n(composite) = 4
n(S) = 6

$$P(\text{composite}) = \frac{\text{n(composite)}}{\text{n(S)}}$$

$$P(\text{composite}) = \frac{4}{6}$$

Practice

13. The sides of a cube are numbered 11 to 16. If Jan Renz rolled the cube once, what is the probability of rolling a composite number?

n(composite) = 4
n(S) = 6

$$P(\text{composite}) = \frac{\text{n(composite)}}{\text{n(S)}}$$

$$P(\text{composite}) = \frac{4}{6} = \frac{2}{3}$$

Practice

14. A box contains 7 red balls, 5 orange balls, 4 yellow balls, 6 green balls, and 3 blue balls. What is the probability of drawing out an orange ball?

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n(orange) = 5

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14. A box contains 7 red balls, 5 orange balls, 4 yellow balls, 6 green balls, and 3 blue balls. What is the probability of drawing out an orange ball?

n(orange) = 5
n(S) = 25

Practice

14. A box contains 7 red balls, 5 orange balls, 4 yellow balls, 6 green balls, and 3 blue balls. What is the probability of drawing out an orange ball?

n(orange) = 5
n(S) = 25

$$P(\text{orange}) = \frac{\text{n(orange)}}{\text{n(S)}}$$

Practice

14. A box contains 7 red balls, 5 orange balls, 4 yellow balls, 6 green balls, and 3 blue balls. What is the probability of drawing out an orange ball?

n(orange) = 5
n(S) = 25

$$P(\text{orange}) = \frac{\text{n(orange)}}{\text{n(S)}}$$

$$P(\text{orange}) = \frac{5}{25}$$

Practice

14. A box contains 7 red balls, 5 orange balls, 4 yellow balls, 6 green balls, and 3 blue balls. What is the probability of drawing out an orange ball?

n(orange) = 5
n(S) = 25

$$P(\text{orange}) = \frac{\text{n(orange)}}{\text{n(S)}}$$

$$P(\text{orange}) = \frac{5}{25} = \frac{1}{5}$$

Practice

15. A die is rolled. What is the probability of getting a number greater than 4?

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$n(n > 4) = 2$

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$n(n > 4) = 2$
$n(S) = 6$

Practice

15. A die is rolled. What is the probability of getting a number greater than 4?

$n(n > 4) = 2$
$n(S) = 6$
$$P(n > 4) = \frac{n(n > 4)}{n(S)}$$

Practice

15. A die is rolled. What is the probability of getting a number greater than 4?

$n(n > 4) = 2$
$n(S) = 6$

$$P(n > 4) = \frac{n(n > 4)}{n(S)}$$

$$P(n > 4) = \frac{2}{6}$$

Practice

15. A die is rolled. What is the probability of getting a number greater than 4?

$n(n > 4) = 2$
$n(S) = 6$

$$P(n > 4) = \frac{n(n > 4)}{n(S)}$$

$$P(n > 4) = \frac{2}{6} = \frac{1}{3}$$

Practice

16. A die is rolled. What is the probability of getting a number less than 4?

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$n(n < 4) = 3$

Practice

16. A die is rolled. What is the probability of getting a number less than 4?

$n(n < 4) = 3$
$n(S) = 6$

Practice

16. A die is rolled. What is the probability of getting a number less than 4?

$n(n < 4) = 3$
$n(S) = 6$
$$P(n < 4) = \frac{n(n < 4)}{n(S)}$$

Practice

16. A die is rolled. What is the probability of getting a number less than 4?

$n(n < 4) = 3$
$n(S) = 6$
$$P(n < 4) = \frac{n(n < 4)}{n(S)}$$

$$P(n < 4) = \frac{3}{6}$$

Practice

16. A die is rolled. What is the probability of getting a number less than 4?

$n(n < 4) = 3$
$n(S) = 6$
$$P(n < 4) = \frac{n(n < 4)}{n(S)}$$
$$P(n < 4) = \frac{3}{6} = \frac{1}{2}$$

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

n(even prime) = 4

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

n(even prime) = 4
n(S) = 16

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

n(even prime) = 4
n(S) = 16

$$P(\text{even prime}) = \frac{\text{n(even prime)}}{\text{n(S)}}$$

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

n(even prime) = 4
n(S) = 16

$$P(\text{even prime}) = \frac{\text{n(even prime)}}{\text{n(S)}}$$

$$P(\text{even prime}) = \frac{4}{16}$$

Practice

17. A spinner is divided equally and numbered as follows: 1, 1, 2, 3, 3, 4, 1, 1, 2, 4, 1, 2, 3, 4, 1, 2. What is the probability that the pointer will stop at an even prime?

n(even prime) = 4
n(S) = 16

$$P(\text{even prime}) = \frac{\text{n(even prime)}}{\text{n(S)}}$$

$$P(\text{even prime}) = \frac{4}{16} = \frac{1}{4}$$

Practice

18. What is the probability of getting an 8 from a deck of 52 cards?

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$n(8) = 4$

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18. What is the probability of getting an 8 from a deck of 52 cards?

$n(8) = 4$
$n(S) = 52$

Practice

18. What is the probability of getting an 8 from a deck of 52 cards?

n(8) = 4
n(S) = 52
$$P(8) = \frac{n(8)}{n(S)}$$

Practice

18. What is the probability of getting an 8 from a deck of 52 cards?

n(8) = 4
n(S) = 52

$$P(8) = \frac{n(8)}{n(S)}$$

$$P(8) = \frac{4}{52}$$

Practice

18. What is the probability of getting an 8 from a deck of 52 cards?

n(8) = 4
n(S) = 52

$$P(8) = \frac{n(8)}{n(S)}$$

$$P(8) = \frac{4}{52} = \frac{1}{13}$$

Thank you for attending the virtual class.