



MATHS

BOOKS - BAL BHARTI

PROBABILITY

Example

1. Two coins are tossed simultaneously. Write the sample space S and the number of sample points $n(S)$.



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2. Two coins are tossed simultaneously. Write the sample space S and the number of sample points $n(S)$.



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3. Two coins are tossed simultaneously. Write the sample space S and the number of sample points $n(S)$.



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4. Two coins are tossed simultaneously. Write the sample space S and the number of sample points $n(S)$.



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5. A bag contains 50 cards . Each card bears only one number from
1 to 50 . One card is drawn at random from the bag .
Write the
sample space. Also write the events A, B and find the
number of sample points in them.

Condition for event A : the number on the card is divisible by 6.



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6. A beg contains 50 cards . Each card bears only one number from

1 to 50 . One card is drawn at random from the beg .

Write the

sample space. Also write the events A, B and find the number of sample points in them.

Condition for event B : the number on the card is a complete square.



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7. A sanitation committee of 2 members is to be formed from 3 boys

and 2 girls . Write sample space 'S' and number of sample points

n(s). Also write the following events in set form and number of

sample points in the event

Condition for event A : at least one girl must be a member of the committee.



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8. A sanitation committee of 2 members is to be formed from 3 boys and 2 girls . Write sample space 'S' and number of sample points n(s). Also write the following events in set form and number of sample points in the event

Condition for event C : Committee must be of boys only.



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9. A sanitation committee of 2 members is to be formed from 3 boys and 2 girls . Write sample space 'S' and number of sample points n(s). Also write the following events in set form and number of sample points in the event

Condition for event C : Committee must be of boys only.



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10. A sanitation committee of 2 members is to be formed from 3 boys and 2 girls . Write sample space 'S' and number of sample points n(s). Also write the following events in set form and number of sample points in the event

Condition for event D : At the most one girl should be a member of the committee.



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11. Two dice are rolled, write the sample space 'S' and number of sample points $n(S)$. Also write events and number of sample points in the event according to the given condition
Sum of the digits on upper face is a prime number



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12. Two dice are rolled, write the sample space 'S' and number of sample points $n(S)$. Also write events and number of sample points

in the event according to the given condition

Sum of the digits on the upper face is multiple of 5.



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13. Two dice are rolled, write the sample space 'S' and number of

sample points $n(S)$. Also write events and number of sample points

in the event according to the given condition

Sum of the digits on the upper face is 25.



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14. Two dice are rolled, write the sample space 'S' and number of sample points $n(S)$. Also write events and number of sample points in the event according to the given condition
Digit on the upper face of the first die is less than the digit on the second die .



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15. Find the probability of the following, when one coin is tossed.
Getting head



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16. Find the probability of the following, when one coin is tossed.

Getting tail



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17. If one die is rolled then find the probability of each of the following events

Number on the upper face is prime



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18. If one die is rolled then find the probability of each of the following events

Number on the upper face is even.



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19. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is

A face card .



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20. A card is drawn at random from a well shuffled pack of 52 playing cards. Find the probability of the events that the card drawn is

A face card .



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21. A box contains 5 strawberry chocolates, 6 coffee chocolates and 2 peppermint chocolates . Find the probability of each of the

following events, if one of the chocolates is picked from the box at random .

It is a coffee chocolate.



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22. A box contains 5 strawberry chocolates, 6 coffee chocolates and 2 peppermint chocolates . Find the probability of each of the following events, if one of the chocolates is picked from the box at random .

it is a peppermint chocolate .



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Practice Set 5 1

1. How many possibilities are there in each of the following? Vanita knows the following sites in Maharashtra. She is planning to visit one of them in her summer vacation. 'Ajintha, Mahabaleshwar, Lonar sarovar, Tadoba wild life sanctuary, Amboli, Raigad, Matheran, Anandavan'.



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2. How many possibilities are there in each of the following ?

Any day of a week is to be selected randomly.



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3. How many possibilities are there in the following?

Select one card from the pack of 52 cards.



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4. How many possibilities are there in each of the following ?

One number from 10 to 20 is written on each card.

Select one card randomly.



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Practice Set 5 2

1. For each of the following experiments , write the sample space S and the number of sample points $n(s)$:

One coin and one die are thrown simultaneously.



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2. Write the sample space S and the number of sample points $n(s)$:

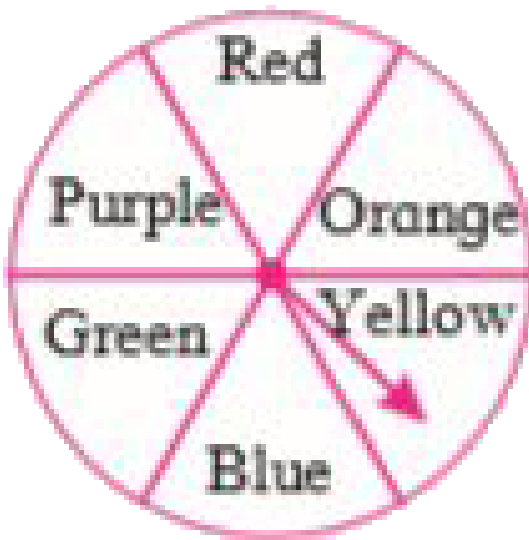
Two digit numbers are formed using digits 2,3 and 5 without repeating the digits.



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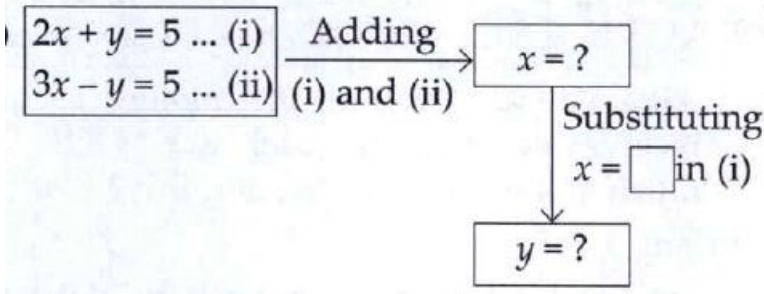
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3. The arrow is rotated and it stops randomly on the disc. Find out on which colour it may stop.



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4.



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5. Form a 'committee' of two , from 3 men

(M_1, M_2, M_3) and 2

women (W_1, W_2) . Complete the following activity to

write the

sample space.

(i) Committee of three men = $\square, \square, \square$

(ii) Committee of two women = \square

(iii) Committee of one man and one women

$\{M_1W_1, \square\square, \square\square, \square\square, \square\square, \square\square\}$

\therefore Sample space =

$\{ _ _ _ , _ _ _ , _ _ _ , _ _ _ , _ _ _ , _ _ _ \}$



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6. Form a 'committee' of two , from 3 men

(M_1, M_2, M_3) and 2

women (W_1, W_2) . Complete the following activity to

write the

sample space.

(i) Committee of three men = $\square, \square, \square$

(ii) Committee of two women = \square

(iii) Committee of one man and one women




$\{M_1W_1, \square\square, \square\square, \square\square, \square\square, \square\square\}$

\therefore Sample space =

$\{ _ _ _ , _ _ _ , _ _ _ , _ _ _ , _ _ _ , _ _ _ \}$

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7. Complete the table:

Classes	Tally marks	Frequency (f) (No. of students)
12 - 13		<input type="text"/>
13 - 14		<input type="text"/>
14 - 15		<input type="text"/>
15 - 16		<input type="text"/>
	Total	$N = \Sigma f = 35$



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Practice Set 5 3

1. Write sample space 'S' and number of sample points ' $n(S)$ '. Also write events A, B, C in the set form and write $n(A)$, $n(B)$, $n(C)$: One die is rolled, Event A: Even number on the upper face. Event B: Odd number on the upper face. Event C: Prime number on the upper face.



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2. Write sample space 'S' and number of sample point 'n(S)' for the following experiment. Also write events A,B,C in the set form and write n(A), n(B), n(C) : Two dice are rolled simultaneously: Event A: The sum of the digits on upper faces is a multiple of 6. Event B: The sum of the digits on the upper face is minimum 10. Event C: The same digit on both the upper faces.



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3. Write sample space 'S' and number of sample point n(S) for each of the following experiments. Also write events P, Q, R in

the set form

and write $n(P)$, $n(Q)$, $n(R)$.

Three coins are tossed simultaneously .

Condition for event P : To get at least one tail .



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4. Write sample space 'S' and number of sample point $n(S)$ for each of

the following experiments. Also write events P, Q, R in the set form

and write $n(P)$, $n(Q)$, $n(R)$.

Two digit number are formed using digits 2, 3, 5, 7, 9 without

repetition of the digits.

Condition for event P : The number formed is odd .

Condition for event Q : The number is a multiple of 5 .

Condition for event R : The number The number formed is greater than 75.



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5. Write sample space 'S' and number of sample point 'n(S)' for the following experiment. Also write events A,B,C in the set form and write n(A), n(B), n(C): From three men and two women, Environment Committee of two persons is to be formed. Event A: There must

be atleast one woman member. Event B: One man, one woman committee to be formed. Event C: There should not be a woman member.



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6. Write sample space 'S' and number of sample point $n(S)$ for each of the following experiments. Also write events P, Q, R in the set form and write $n(P)$, $n(Q)$, $n(R)$.

Three coins are tossed simultaneoulsy .

Codition for event P : To get at least one tail .



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Practice Set 5 4

1. If two coins are tossed , find the probability of the following events:

Getting at least one head.



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2. If two coins are tossed , find the probability of the following events:

Getting no head.



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3. If two dice are rolled simultaneously, find the probability of the following events :

The sum of the digits on the upper faces is at least 10.



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4. Solve the following questions.

If two dice are rolled simultaneously, find the probability of the following events .

The sum of the digits on the upper faces is multiple of 6.



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5. Solve the following questions.

If two dice are rolled simultaneously, find the probability of the following events .

The digit on the first die is greater than the digit on second die



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6. There are 15 tickets in a box, each bearing one of the numbers from 1 to 15. One ticket is drawn at random from the box. Find the probability of event

that the ticket drawn: (i) shows an even number (ii) shows a number which is a multiple of 5.



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7. There are 15 tickets in a box, each bearing one of the numbers from 1 to 15 . One ticket drawn at random from the box. Find the probability of event that the ticket drawn shows an even number.



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8. A two digit number is formed with digits 2,3,5,7,9 without repetition. What is the probability that the

number formed is an odd number ?



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9. A two digit number is formed with digits 2,3,5,7,9 without repetition. What is the probability that the number formed is an odd number ?



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10. A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is (i) Ace. (ii) Spade.



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11. Solve the following questions.

A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is : A club card.



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Problem Set 5 Choose The Correct Alternative

1. Which number cannot represent a probability? a) $\frac{2}{3}$
b) 1.5 c) 0.15 d) 0.7

A. $\frac{2}{3}$

B. 1.5

C. 15 %

D. 0.7

Answer: B



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2. A die is rolled. What is the probability that the number appearing on upper face is less than 3? a) $\frac{1}{6}$

b) $\frac{1}{3}$ c) $\frac{1}{2}$ d) 0

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. 0

Answer: B



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3. What is the probability of the event that a number chosen from 1 to 100 is a prime number ?

A. $\frac{1}{5}$

B. $\frac{6}{25}$

C. $\frac{1}{4}$

D. $\frac{13}{50}$

Answer: C



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4. There are 40 cards in a bag. Each bears a number from 1 to 40. One card is drawn at random. What is the probability that the card bears a number which is a multiple of 5? a) $\frac{1}{5}$ b) $\frac{3}{5}$ c) $\frac{4}{5}$ d) $\frac{1}{3}$

A. $\frac{1}{5}$

B. $\frac{3}{5}$

C. $\frac{4}{5}$

D. $\frac{1}{3}$

Answer: A



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5. If $n(A) = 2$, $P(A) = \frac{1}{5}$, Then $n(S) = ?$ a) 10 b) $\frac{5}{2}$

c) $\frac{2}{5}$ d) $\frac{1}{3}$

A. 10

B. $\frac{5}{2}$

C. $\frac{2}{5}$

D. $\frac{1}{3}$

Answer: A



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Problem Set 5

1. Basketball players John, Vasim, Akash were practising the ball drop in the basket. The probabilities of success for John, Vasim and Akash are $\frac{4}{5}$, 0.83 and 58% respectively. Who had the greatest probability of success?



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2. In a hockey team there are 6 defenders, 4 offenders and 1 goalee. Out of these, one player is to be selected randomly as a captain. Find the probability of the selection that: (i) The goalee will be selected
(ii) A defender will be selected.



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3. In a hockey team there are 6 defenders, 4 offenders and 1 goalee. Out of these, one player is to be selected randomly as a captain. Find the probability

of the selection that: (i) The goalee will be selected
(ii) A defender will be selected.



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4. Joseph kept 26 cards in a cap, bearing one english alphabet on each card. One card is drawn at random. What is the probability that the card drawn is a vowel card?



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5. A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random

to give it to Pranali. What is the probability of the event that Pranali gets: (i) a red balloon (ii) a blue balloon (iii) a green balloon.



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6. A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random to give it to Pranali. What is the probability of the event that Pranali gets: (i) a red balloon (ii) a blue balloon (iii) a green balloon.



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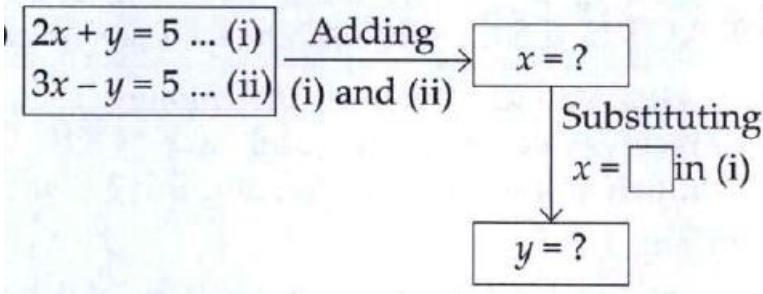
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8. A box contains 5 red, 8 blue and 3 green pens. Rujuta wants to pick a pen at random. What is the probability that the pen is blue?



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9.



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10. A box contains 30 tickets, bearing only one number from 1 to 30 on each. If one ticket is drawn at random, find the probability of an event that the ticket drawn bears (i) an odd number. (ii) a complete square number.



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11. A box contains 30 tickets, bearing only one number from 1 to 30 on each. If one ticket is drawn at random, find the probability of an event that the ticket drawn bears (i) an odd number. (ii) a complete square number.



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12. Length and breadth of a rectangular garden are 77 m and 50 m. There is a circular lake in the garden having diameter 14 m. Due to wind, a towel from a

terrace on a nearby building fell into the garden. Find the probability of the event that it fell in the lake.



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13. In a game of chance, a spinning arrow comes to rest at one of the numbers 1,2,3,4,5,6,7,8. All these are equally likely outcomes. Find the probability that it will rest at number greater than 2.



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14. There are six cards in a box each bearing a number from 0 to 5. Find the probability of each of

the following events, that a card drawn shows a natural number.



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15. There are six cards in a box , each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows an even number.



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16. There are six cards in a box, each bearing a number from 0 to 5. Find the probability of each of

the following events, that a card drawn shows,
a whole number.



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17. There are six cards in a box , each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows an even number.



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18. A bag contains 3 red ,3 white and 3 green balls. One ball is taken out of the bag at random. What is

the probability that the ball drawn is (i) red (ii) not red (iii) either red or white.



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19. A bag contains 3 red, 3 white and 3 green balls. One ball is taken out of the bag at random. What is the probability that the ball drawn is (i) red (ii) not red (iii) either red or white.



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20. A bag contains 3 red, 3 white and 3 green balls. One ball is taken out of the bag at random. What is

the probability that the ball picked up is either red or white.



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21. Each card bears one letter from the word 'mathematics'. The cards are placed on the table upside down. Find the probability that a card drawn bears the letter 'm'.



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22. Out of 200 students from a school, 135 like kabbaddi and the remaining students do not like the

game.If one student is selected at random from all the students,find the probability that the student selected doesn't like kabbaddi.



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23. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a prime number.



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24. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a prime number.



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25. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a prime number.



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26. The faces of a die bear numbers 0,1,2,3,4,5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.



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