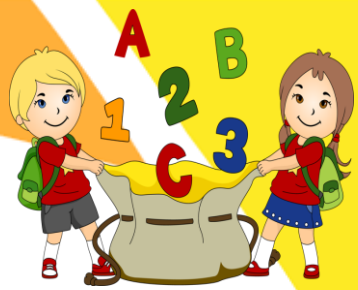


Questions

Exercise (1)

(1) Complete:

1) $-3\,ab^2 \times 2a^2b^3$ = ……

2) $3 \times 4 - 21 \div 7$ = ……

3) $\sqrt{9+16}$ = ……

4) The additive inverse of $\left(\frac{-2}{3}\right)^3$ is ……

(2) Choose the correct answer:

1) 7.35×10^{-4} equals:

a) 0.000735 b) 0.00735 c) 0.0735 d) 7350

2) $\sqrt{\left(-\frac{2}{3}\right)^2}$ equals:

a) $\frac{-4}{9}$ b) $\frac{-2}{3}$ c) $\frac{2}{3}$ d) $\frac{4}{9}$

3) $3^{10} + 3^{10} + 3^{10}$ equals:

a) 3^{10} b) 3^{11} c) 3^{20} d) 3^{30}

4) The age of Amer now is x years then his age 5 years ago is …..

a) 5x b) 5 + x c) 5 – x d) x – 5

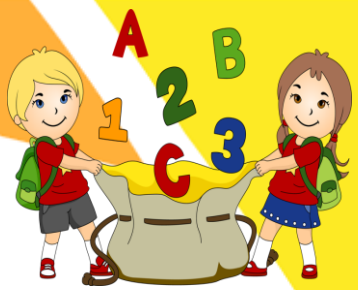
(3)

a) Find the value of the following expression in simplest form: $\frac{5^{-2} \times 5^5}{5^3}$

b) If $300000 = 3 \times 10^x$ find the value of x.

c) Find the solution set of the following inequality in $\mathbb{Q}$: $4x + 7 \leq 3$

d) Three even consecutive numbers its sum is 204. Find these numbers.



Exercise (2)

(1) Complete:

1) $\sqrt{100-64}$ = ……

2) If x + 9 = 11 , then 7x = ……

3) If we subtract twice the number x from 3 then the results is ……

4) if x = $\frac{1}{4}$, y = $\frac{1}{8}$, then $(x-y)^{-1}$ = ……

(2) Choose the correct answer:

1) $2^4 \times 3^4$ = ……

a) 5^4 b) 6^4 c) 6^8 d) 6^{16}

2) If x = 0.0009 then $\sqrt{x}$ equals ……

a) 0.0003 b) 0.0081 c) 0.003 d) 0.03

3) Which of the following is the smallest number:

a) 314×10^3 b) 3.14×10^4 c) 31.4×10^5 d) 0.314×10^6

4) If – x < 3 then:

a) x > 3 b) x > –3 c) x < 3 d) x < –3

5) Quarter of 4^{20} equals ……

a) 4^5 b) 4^{10} c) 4^{19} d) 2^{10}

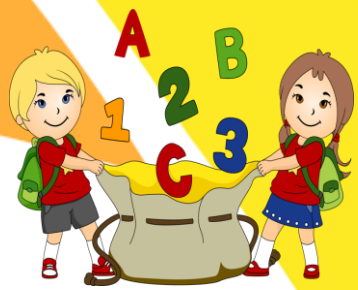
(3)

a) Put the expression $\left(\frac{1}{2}\right)^2 \times \left(-\frac{1}{2}\right)^3$ in the simplest form.

b) If x = $\frac{-1}{2}$, y = $\frac{3}{4}$ find the numerical value of the expression $\left(\frac{y}{x^2}\right)^{-2}$ in the simplest form.

c) Find in Z the s.s of the inequality 3 – 2x $\geq$ 1, then represent it in the number line.

d) The length of a rectangle is twice its width, if the length decreases by 5 cm and the width increases by 6 cm, the rectangle becomes a square. Find the area of the rectangle.



Exercise (3)

(1) Complete:

1) The standard form of the number 0.00003 = ……

2) $\sqrt{10^2 - 6^2}$ = ……

3) The s.s of the equation: 3x + 7 = 5 , x ∈ ℚ is ……

4) If: ac > bc , then a …….. b (where c < 0)

(2) Choose the correct answer:

1) $2^7 \times 3^7$ equal: ……

a) 5^7 b) 6^7 c) 6^{14} d) 6^{49}

2) If a = b then $\left(\frac{3}{7}\right)^{b-a}$ equals ……

a) zero b) 1 c) $\frac{3}{7}$ d) $\frac{7}{3}$

3) $\frac{4a^2b^4}{2a^3b^3}$ equals ……

a) 2 ab b) $2a^5b^7$ c) $\frac{2b}{a}$ d) $\frac{2}{ab}$

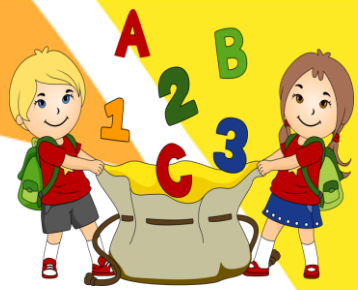
(3)

a) Find the s.s of the inequality in ℚ : 1 < x – 3 ≤ 6

b) A man's age now is three times his son's age, and after two years, the sum of their ages will be 52 years, what the age of each now?

c) Put the following expression in simplest form: $\frac{7^{-3} \times 7^5}{7^2}$

d) If x = $\frac{-3}{2}$, y = $\frac{-4}{3}$ find in simplest form $\left(\frac{x}{y}\right)^2$



Statistic

Exercise (1)

(1) Complete:

1) The probability of the certain event = ……

2) If a coin is tossed once then the probability of appearance of a head = ……

3) A card is chosen randomly from a group of cards labeled by the letters of word "Mansora" then the probability that the drawn card carries the letter "S" is ……

(2) Choose the correct answer:

1) If the probability that a pupil succeed is 75% then the probability of his failure is ……

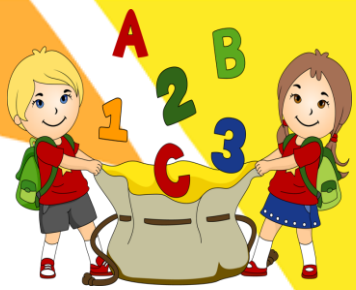
a) - 0.25 b) 0.25 c) 0.75 d) 1.25

2) If a die is thrown once and observed the upper face then the probability of appearance a number divisible by 3 = ……

a) $\frac{1}{4}$ b) $\frac{1}{3}$ c) $\frac{1}{2}$ d) $\frac{3}{4}$

3) A card is drawn randomly from 10 cards numbered from 1 to 10, then the probability of drawing card carries number odd and greater than 3 is ……

a) $\frac{3}{10}$ b) $\frac{4}{10}$ c) $\frac{5}{10}$ d) $\frac{7}{10}$



(3)

a) If the probability that a pupil succeed in a subject is 0.85. Find the probability of his failure in the same subject.

b) A bowl contains a number of similar colored balls 2 of them are green, 4 are blue and the rest are red, if the probability of drawing a green ball at random is $\frac{1}{6}$. Find the number of red balls.

c) The set {2 , 3 , 5} is used in writing a number contains of two digits:

* First: Write the sample space.

* Second: Find the probability of the following events:

i) The sum of the two digits are 12

ii) Both of the two digits are equal.

Exercise (2)

(1) Complete:

1) The probability of the impossible event = ……

2) If a die is thrown once then the probability of appearance number 3 on the upper face = ……

3) If a digits is chosen at random from the number 37450 then the probability that the chosen digit is even = ……..

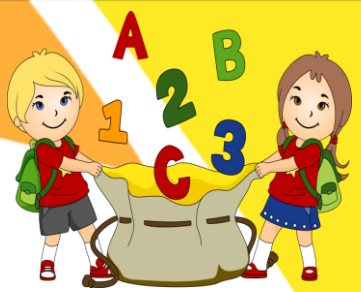
(2) Choose the correct answer:

1) Which of the following may be the probability of an event?

a) - 0.35 b) 98% c) 102% d) 1.13

2) In an experiment of throwing a regular die once, the probability of appearance a number greater or equal 6 is ……..

a) zero b) $\frac{1}{6}$ c) $\frac{5}{6}$ d) 1



3) A basket contains 48 of similar balls, some of them are white, red and the rest are green, if the probability that the chosen ball is red is $\frac{5}{8}$, then the number of red balls is ……..

a) 24 b) 30 c) 32 d) 36

(3)

a) A bag contains 15 cards labeled from 1 to 15, a card is drawn randomly. Find the probability that the drown card carries even number greater than 7.

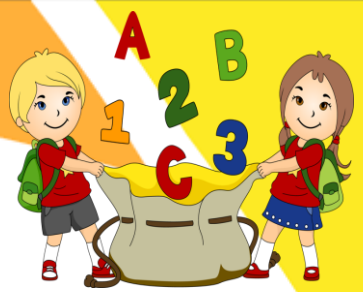
b) If a regular die is thrown once, what is the probability of the following events:

* First: appearance number divisible 7.
* Second: appearance prime number less or equal 5.

c) A card is drawn randomly from 8 cards are numbered from 1 to 8. Find the probability of the following events:

i) Getting even number greater or equal 4.

ii) Getting a prime number.



Exercise (3)

(1) Complete:

1) The probability of any event not less than …… and not more than ……

2) When thrown a die once, then the probability of getting an odd number on the upper face = ……

3) If the probability that the pupil succeeds is 0.85 then the probability of his failure is ……

(2) Choose the correct answer:

1) When tossing a coin 200 times then the expected of the approximating number of appearance of a head equals ……

a) 96 b) 106 c) 199 d) 201

2) The number of pupils in a class is 32 pupils in a school of 320 pupils, if a pupil is selected randomly what is the probability that the pupil from this class?

a) $\frac{1}{8}$ b) $\frac{1}{4}$ c) $\frac{1}{5}$ d) $\frac{1}{10}$

3) When a die is tossed twice and observed the upper face in each time then the probability of appearance number 5 in the two tosses is ……

a) $\frac{1}{36}$ b) $\frac{5}{36}$ c) $\frac{6}{36}$ d) $\frac{25}{36}$

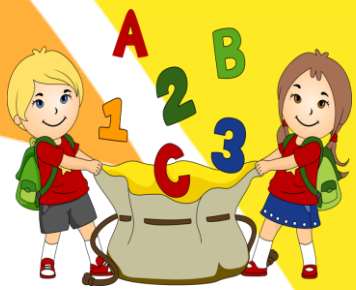
(3)

a) A bowl contains 6 red balls, 10 black and 4 white balls, a ball is drawn randomly find the probability of the ball is not red.

b) A box contains 15 cards numbered from 1 to 15, a card is drawn at random. Find the probability that the drawn card carries even number divisible by 3.

c) The set { 2 , 3 , 5} is used in writing a 2-different digit number. Find the probability of the following events:

* First: The unit digit is even.
* Second: The sum of the two digits greater than 5.



Model (1)

(1) Complete:

1) 2 × 6 – 4 ÷ 2 = ……

2) If 7 – 2x = 3, then x = ……..

3) If 3x + 1 $\geq$ 10 , then x $\geq$ ……

4) The standard form of the number 0.7 × 0.005 = ……

5) A class has 36 students, the number of boys are 20, if a student is chosen randomly, then the probability that the student is a girl = ……

(2) Choose the correct answer:

1) The sum of the probabilities for all possible outcomes of a randomly experiment is ……..

a) zero b) 1 c) > 1 d) < 1

2) If 3a = $\sqrt{4}$ b , then $\frac{a}{b}$ = ……

a) 2 : 3 b) 3 : 2 c) 3 : 4 d) 4 : 3

3) $\left(\frac{-2}{3}\right)^{-3}$ equals ……

a) $\frac{-27}{8}$ b) $\frac{-8}{27}$ c) $\frac{8}{27}$ d) $\frac{27}{8}$

4) There are 21 boys and 15 girls in a classroom, one pupil is chosen randomly, the probability that the chosen pupil is a girls = ……

a) $\frac{5}{12}$ b) $\frac{7}{12}$ c) $\frac{4}{7}$ d) $\frac{5}{6}$

5) $\sqrt{(-8)^2 + (-6)^2} =$ ……

a) | - 10 | b) ± 10 c) 14 d) - 14

(3) Simplify to the simplest form:

a) $\left(-\frac{3}{7}\right)^0 \times \left(\frac{-2}{5}\right)^2 \times \sqrt{6\frac{1}{4}}$

b) Find the numerical value of the expression

3ab + 8a ÷ 4b when a = 4 , b = -2

(4) Simplify to the simplest form:

a) Find in ℚ the s.s of the following:

First: 3x + 1 = 25 Second: 2x + 5 < 16

b) The population of a city has been growing according to the rule:

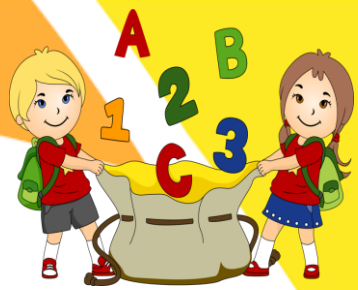
$y = 3\ (1.02)^n$ million. Calculate the population that will be in 2 years in the standard form.

(5) A factory of a tire record the distance that traveled by a certain type of then before damage for 800 units of this type as following:

The distance in thousand km	Less than 50	50 to 100	More than 100 till 150	More than 150
The number of damage tire	80	120	280	320

If you bought the type of this tyre, what is the probability of change it:

- First: before traveled 50 thousand km.
- Second: After traveled more than 100 thousand km.



Model (2)

(1) Complete:

1) $\left(\frac{-2}{3}\right)^0$ = ……

2) $\sqrt{\frac{16}{49}}$ = ……

3) The probability of impossible event = ……..

4) Complete in the same pattern 1, 2, 3, 5, 8, ……. , ……

5) If the probability that the student is absent in a school is 0.15, if the number of students of this school is 600, then the number of the present student that day is ……

(2) Choose the correct answer:

1) $2^3 \times 2^5$ = ……

a) 2^2 b) 2^8 c) 2^{15} d) 2^{53}

2) Which of the following the greatest:

a) 2.3×10^4 b) 2.3×10^5 c) 3.2×10^4 d) 3.2×10^5

3) The side length of a square whose area $9x^2$ cm^2 is ……

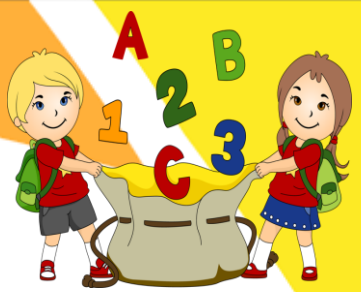
a) $3x$ b) $3x^2$ c) $9x$ d) $9x^2$

4) Which of the following may be probability of an event:

a) - 0.25 b) 87% c) 1.05 d) 130%

5) If - x > 4, then :

a) x > - 4 b) x > 4 c) x < - 4 d) x < 4



(3)

a) Two integers number the smaller one is 2x and the greater is 5x, if the difference between them is 30 find the two numbers.

b) Find the value of $\frac{5^{-4} \times 5^{7}}{5^{3}}$ in the simplest form.

(4)

a) Find in $\mathbb{Q}$ the s.s of each of the following:

i) $(3x + 2) + 5 = 13$ ii) $2x + 15 < 19$

b) Find the value of the expression in the simplest form:

$$\left(\frac{-1}{3}\right)^{2} + \sqrt{\frac{64}{81}} - \left(\frac{3}{7}\right)^{0}$$

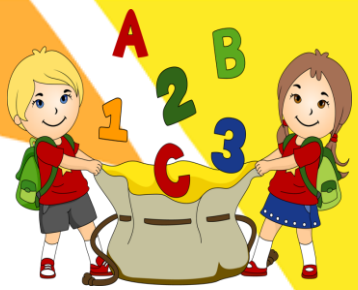
(5)

a) If a regular die is thrown once and observed the number on upper face, find the probability of each of the following:

i) getting prime even number.

ii) getting odd number less than 4.

b) If the length of a rectangle is twice its width, its area is 12.5 cm^2. Calculate its length, its width.



Model (3)

(1) Complete:

1) The probability of the certain event = ……

2) $\frac{1}{9}$, $\frac{1}{8}$, $\frac{1}{7}$, $\frac{1}{6}$, …… , …….…. (in the same pattern)

3) The s.s in $\mathbb{Q}$ for the equation 2x + 3 = 4 is ……

4) If x = $\frac{1}{2}$, y = $\frac{1}{4}$, then $(x + y)^{-1}$ = ……

5) 0.00037 = 3.7×10^{n}, the value of n = ……

(2) Choose the correct answer:

1) The multiplicative inverse of the number: $\sqrt{\frac{9}{16}}$ is ……..…..

a) $\frac{-4}{3}$ b) $\frac{-3}{4}$ c) $\frac{3}{4}$ d) $\frac{4}{3}$

2) $\frac{x}{2}$ < 5 equivalent ……

a) x < $\frac{5}{2}$ b) x > $\frac{5}{2}$ c) x < 10 d) x > 10

3) $3^x + 3^x + 3^x$ equals:

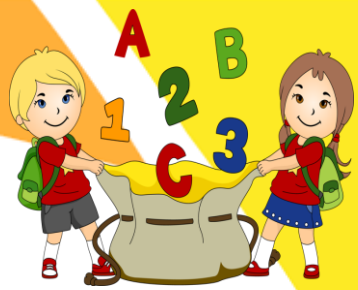
a) 3^x b) 3^{x+1} c) 27^x d) $3x^3$

4) There are 480 pupils in a school, 120 of them failed. A pupil is chosen at random, then the probability that the pupil is succeeded ……

a) 0.25% b) 0.75 c) 0.8 d) 0.667

5) If x = y , then $\left(\frac{3}{5}\right)^{x-y}$ = ……

a) 0 b) 1 c) $\frac{3}{5}$ d) $\frac{5}{3}$



(3)

a) What is the number which if we add it to its three times, the result is 28.

b) If the area of a square equals the area of a triangle whose base length is 9 cm, its height is 8 cm. Find the side length of the square.

(4)

a) Find in $\mathbb{Q}$ the solution set of the following:

i) $3x + 5 = 11$ ii) $2x + 3 \leq 7$

b) If the distance (S) between the sun and the earth is 1.44×10^8 km and the light velocity (V) is 3×10^8 m/sec. Calculate the elapsed time (t) that the light takes to reach from the sun to the earth given that ($S = V \times t$)

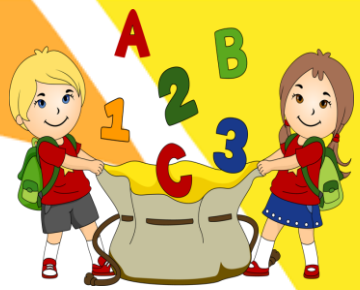
(5)

a) Find the result of the expression: $(5.4 \times 10^4) + (3.7 \times 10^5)$ in the form $a \times 10^n$ where n is integer number.

b) A coin is tossed twice calculate the probability:

i) the two faces are similar.

ii) appearance only one tail.



Model (4)

(1) Complete:

1) When a coin is tossed once the probability of appearance of a head is …….

2) $\frac{1}{1000}$, $\frac{1}{100}$, $\frac{1}{10}$, …… (in the same pattern)

3) The s.s of the inequality $2 < x \leq 4$ in $\mathbb{N}$ is ……

4) The additive inerfe of $\sqrt{\left(-\frac{2}{5}\right)^2}$ is ……

5) $\frac{1}{2}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{15}{16}$, …… , …….

(2) Choose the correct answer:

1) The s.s of the equation: $x + 3 = 3$ in $\mathbb{N}$ is ……

a) ∅ b) { 0 } c) { 3 } d) { 6 }

2) The number which in the standard form between the following numbers is ……..

a) 11×10^8 b) 9.7×10^{-5} c) 10.3×10^{-3} d) 0.87×10^8

3) If a coin is tossed 160 times then the approximate expected number of the appearance of a head is ……

a) 60 b) 78 c) 90 d) 159

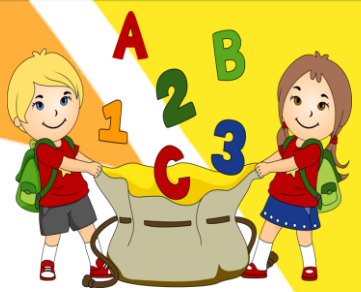
4) The number $\sqrt{0.09}$ is ……..

a) natural b) positive integer

c) negative integer d) rational

5) If : $\frac{6x}{5} = -2$, then x^2 = ……

a) $\frac{-25}{9}$ b) $\frac{5}{9}$ c) $\frac{25}{9}$ d) $\frac{25}{3}$



(3)

a) If x = $\frac{3}{4}$, y = $\frac{-3}{2}$ find the numerical value of the expression $\left(\frac{x^2}{y^3}\right)^2$

b) The sum of two natural number is 15 and the difference between them is 5. Find the two number.

(4)

a) Find in $\mathbb{Q}$ the solution set for each of the following:

First: 3x + 2 = 8 Second: 4x

b) If $\frac{3}{4}$ of the area of a square is 1 $\frac{11}{64}$ m^2. Find its side length.

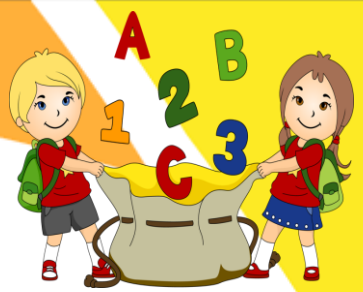
(5)

a) A coin is tossed twice calculate the probabilities:

* First: the appearance of at least one head.

* Second: the appearance of at most one head.

b) Find the value of $\left(\frac{7^4 \times 7^{-2}}{7^3}\right)^{-2}$



Model (5)

(1) Complete:

1) In the experiment of tossing a die one then the probability of appearance even number is ……..

2) If $\frac{x}{y} = \frac{7}{2}$, then $\frac{2x}{7y}$ = …… = ……..…

3) If a = 0.000625 , then $\sqrt{a}$ = 2.5 ×10……

4) The result of the expression: $\left(\frac{-1}{2}\right)^2 - \left(\frac{-1}{2}\right)^3$ is ……..…

5) Quarter of 4^{20} equals ……..

(2) Choose the correct answer:

1) The s.s of the inequality x < 2 in $\mathbb{N}$ is …….

a) { 0 } b) { 1 } c) { 0 , 1} d) ∅

2) If $\frac{26}{x}$ + 1 = 14, then x equals ……..

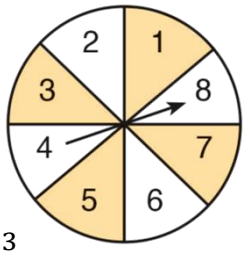
a) 2 b) 10 c) 13 d) 20

3) If 5x = 35 , then 2x + 1 equals …….

a) 7 b) 8 c) 15 d) 71

4) In the opposite figure:

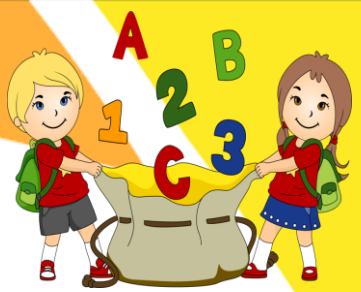
Find the probability that the pointer stop at a number greater than 6 equal ……..



a) $\frac{1}{8}$ b) $\frac{1}{4}$ c) $\frac{3}{8}$ d) $\frac{3}{4}$

5) $\sqrt{100 - (-6)^2}$ = ……..

a) 4 b) 8 c) -8 d) 16



(3)

a) Find the value of the expression: $12 \times (2)^2 \div 24 + 3^2$

b) If $x = -\frac{1}{2}$, $y = \left|\frac{-3}{4}\right|$, find the numerical value of $\left(\frac{y}{x^2}\right)^{-2}$

(4)

a) Find in $\mathbb{Q}$ the solution set of each of the following:

i) $3 - 4x = -5$ ii) $2x - 1 \geq 5$

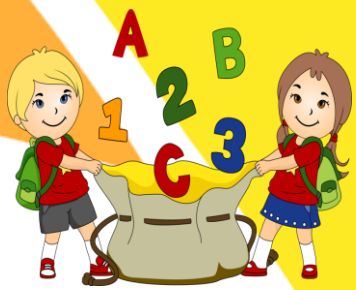
b) Simplify: $\frac{n}{2}[3n - 6] + \frac{1}{2}[6 - 2n]$, then find its value when n = 1

(5)

a) The sum of the age of 3 sisters now is 25 years. If the eldest was born before the middle by 3 years, and the middle was born before the youngest by 2 years. Find the age of each of them now.

b) A box contains 4 white, 5 red and 6 blue balls. A ball is drawn randomly from the box. Calculate the probabilities of the following events.

i) the ball is red. ii) the ball is white or red.



Model Answers

Exercise (1)

(1) Complete:

1) $-6a^3b^5$ 2) 9 3) 5 4) $\left(\frac{2}{3}\right)^3$

(2) Choose the correct answer:

1) a 2) c 3) b 4) d

(3)

a) $5^{-2+5-3} = 5^0 = 1$ b) 100.000

c) $x \leq \frac{10}{4}$ s.s = $\{ x : x \in \mathbb{Q} , x \leq \frac{10}{4} \}$

d) $x + x + 2 + x + 4 = 204$

$3x + 6 = 204$

$3x = 198$

$x = \frac{198}{3} = 66$

$x + 2 = 68$ $x + 4 = 70$

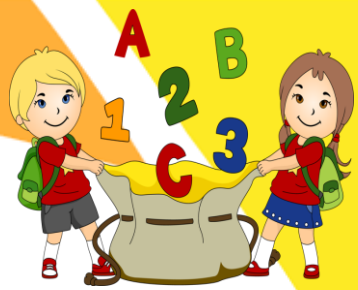
Exercise (2)

(1) Complete:

1) 6 2) 14 3) 3 – 2x 4) 8

(2) Choose the correct answer:

1) b 2) d 3) b 4) b 5) c



(3) a) $-\left(\frac{1}{2}\right)^5$ b) $\frac{4}{9}$

c) $-2x > -1$

$x < 1$ S.S = { 1, 0 , – 1 }

d) $w = x$ $L = 2x$

$2x - 5 = x + 6$

$2x - x = 6 + 5$

$x = 11$ $2x = 22$

Area = L × w = 11 × 22 = 242 cm^2

Exercise (3)

(1) Complete:

1) 3×10^{-5} 2) 8

3) $x = \frac{-2}{3}$ s.s = $\{\frac{-2}{3}\}$ 4) >

(2) Choose the correct answer:

1) b 2) b 3) a

(3) a) $1 + 3 < x - 3 + 3 \leq 6 + 3$

$4 < x \leq 9$

S.S = $\{ x : x \in \mathbb{Q} , 4 < x \leq 9 \}$

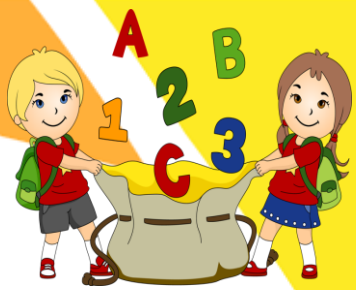
b) son = x father = 3x

$x + 2 + 3x + 2 = 52$

$4x = 48$ $x = \frac{48}{4} = 12$

father = 12 × 3 = 36

c) $7^{(-3+5-2)} = 7^0 = 1$ d) $\frac{9}{8}$



Statistic

Exercise (1)

(1) Complete:

1) 1 2) $\frac{1}{2}$ 3) $\frac{1}{7}$

(2) Choose the correct answer:

1) b 2) c 3) a

(3) a) 0.15

b) Total × $\frac{1}{6}$

Total = $\frac{1}{6}$ ÷ 2

no. of red = 12 - 6 = 6

c) s.s = { 22 , 23 , 25 , 33 , 35 , 32 , 55 , 53 , 52 }

i) = 0 ii) = $\frac{3}{9}$ = $\frac{1}{3}$

Exercise (2)

(1) Complete:

1) 0 2) $\frac{1}{6}$ 3) $\frac{2}{5}$

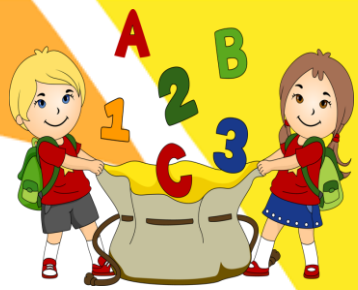
(2) Choose the correct answer:

1) b 2) b 3) b

(3) a) $\frac{4}{15}$

b) 1st : 0 2nd : $\frac{1}{2}$

c) i) $\frac{3}{8}$ ii) $\frac{1}{2}$



Exercise (3)

(1) Complete:

1) 0 , 1 2) $\frac{1}{2}$ 3) 0.15

(2) Choose the correct answer:

1) a 2) d 3)

(3) a) $\frac{7}{10}$ b) $\frac{2}{15}$

c) s.s = { 23 , 25 , 32 , 35 , 52 , 53 }

1st : $\frac{2}{6} = \frac{1}{3}$ 2nd : $\frac{4}{6} = \frac{2}{3}$

Model (1)

(1) Complete:

1) 10 2) x = 2 3) $x \geq 3$

4) 3.5×10^{-3} 5) $\frac{4}{9}$

(2) Choose the correct answer:

1) b 2) a 3) a 4) a 5) a

(3) Simplify to the simplest form:

a) $\frac{4}{25}$ b)

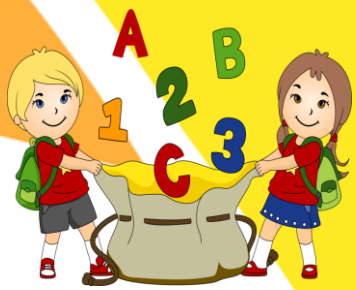
(4) a)

1st s.s = { 8 }

2nd s.s = $\{ x : x \in \mathbb{Q} , x < \frac{11}{2} \}$

b) $3 \times (1.02)^2 \times 10^6 = 3.1212 \times 10^6$

(5) 1st = $\frac{80}{800} = \frac{1}{10}$ 2nd = $\frac{600}{800} = \frac{3}{4}$



Model (2)

(1) Complete:

1) 1 2) $\frac{4}{7}$ 3) 0 4) 13 , 21 5) 90

(2) Choose the correct answer:

1) b 2) d 3) a 4) b 5) c

(3) a) $5x - 2x = 30$

$3x = 30$

$x = 10$ $1^{st} = 50$ $2^{nd} = 20$

b) $5^0 = 1$

(4) a) i) s.s = { 2 } ii) s.s = { x : x ∈ ℚ x < 4 }

b) zero

(5) a) i) $\frac{1}{6}$ ii) $\frac{1}{3}$

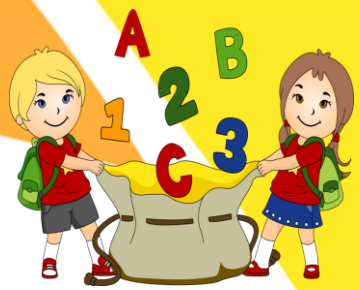
b) w = x L = 2x

$x \times 2x = 12.5\ cm^2$

$2x^2 = 12.5$ $x^2 = \frac{12.5}{2} = 6.25$

$x = \sqrt{6.25} = 2.5$ cm ← w

L = 2 × 2.5 = 5 cm



Model (3)

(1) Complete:

1) 1 2) $\frac{1}{5}$, $\frac{1}{4}$ 3) { $\frac{1}{2}$ } 4) $\frac{4}{3}$ 5) - 5

(2) Choose the correct answer:

1) $\frac{4}{3}$ 2) c 3) b 4) b 5) b

(3)

(4) a) i) = { 2 }

ii) = { x : x ∈ ℚ , x ≤ 2 }

b) time = $\frac{S}{V} = \frac{1.44 \times 10^8 \times 1000}{3 \times 10^8}$ = 480 sec. = 8 mins.

(5) a) 4.24×10^5 b) i) $\frac{1}{2}$ ii) $\frac{1}{2}$

Model (4)

(1) Complete:

1) $\frac{1}{2}$ 2) 1 3) { 3 , 4 } 4) $\frac{-2}{5}$ 5) $\frac{31}{32}$, $\frac{63}{64}$

(2) Choose the correct answer:

1) b 2) b 3) b 4) d 5) c

(3) a) $\frac{1}{36}$

b) big no = x small = x – 5

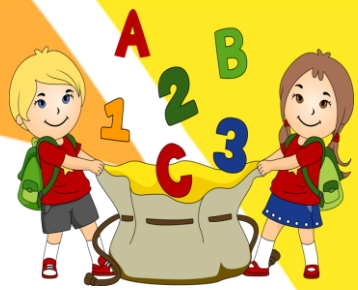
x + x – 5 = 15 x = 10

(4) a) 1st = { 6 } 2nd = { x : x ∈ ℚ , x < $\frac{5}{2}$ }

b)

(5) a) 1) $\frac{3}{4}$ 2) $\frac{3}{4}$

b) $[(7)^{4-2-3}]^{-2} = (7^{-1}) = 7^2 = 49$



Model (5)

(1) Complete:

1) $\frac{1}{2}$ 2) 1 3) -2 4) $\frac{3}{8}$ 5) 4^{19}

(2) Choose the correct answer:

1) c 2) a 3) c 4) b 5) b

(3) a) 11 b) $-\frac{1}{9}$

(4) a) i) = { 2 } ii) = { x : x $\in \mathbb{Q}$, x $\geq$ 3 } b) $\frac{1}{2}$

(5) a) x + x + 2 + x + 5 = 25

3x + 7 = 25

3x = 18 x = 6

x + 2 = 8 x + 5 = 11

b) i) $\frac{5}{15} = \frac{1}{3}$ ii) = $\frac{9}{15} = \frac{3}{5}$