RS Aggarwal Solutions for Class 7 Maths chapter 10
Percentage

EXERCISE 10A PAGE: 142

1. Convert each of the following fractions into a percentage:

(i). (47/100)

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (47/100) × 100
= 47%

(ii). (9/20)

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (9/20) × 100
= 9 × 5
= 45%

(iii). (3/8)

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (3/8) × 100
= (3/2) × 25
= (75/2)
= 37.5%

(iv). (8/125)

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (8/125) × 100
= (8/5) × 4
= (32/5)
= 37(1/2) %

(v). (19/500)

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (19/500) × 100
= (19/5)
= 3.8%

(vi). (4/15)
Solution:-
In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (4/15) × 100
= (4/3) × 20
= 26(2/3) %

(vii). (2/3)
Solution:-
In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (2/3) × 100
= (200/3)
= 66(2/3) %

(viii). [1(3/5)]
Solution:-
In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= [1(3/5)] × 100
= (8/5) × 100
= (8 × 20)
= 160 %

2. Convert each of the following into a fraction:
(i). 32%
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,

= (32/100)
= 8/25

(ii). [6(1/4)] %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,

= (25/4)
= (25/4)/100
= (25/4) × (1/100)
= (1/4) × (1/4)
= 1/16

(iii). [26(2/3)] %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (80/3)
= (80/3)/100
= (80/3) × (1/100)
= (4/3) × (1/5)
= 4/15

(iv). 120 %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (120)/100
= (6/5)
= [1(1/5)]

(v). 6.25 %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (6.25)/100
= (625/10000)
= (25/400)
= (1/16)

(vi). 0.8 %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (0.8)/100
= (8/1000)
= (1/125)

(vii). 0.06 %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (0.06)/100
= (6/10000)
= (3/5000)

(viii). 22.75 %
Solution:-
To convert a percentage into a fraction, we divide it by 100 and remove the sign %.
We have,
= (22.75)/100
= (2275/10000)
= (91/400)

3. Express each of the following as a ratio:
(i). 43%
Solution:-
Percentage can be expressed as a ratio with its second term 100 and first term equal to the given percentage.
We have,
= (43/100)
= 43: 100

(ii). 36%
Solution:-
Percentage can be expressed as a ratio with its second term 100 and first term equal to the given percentage.
We have,
= (36/100)
= 36: 100

(iii). 7.5%
Solution:-
Percentage can be expressed as a ratio with its second term 100 and first term equal to the given percentage.
We have,
= (7.5/100)
= (75/1000)
= 3/40
= 3: 40

(iv). 125%
Solution:-
Percentage can be expressed as a ratio with its second term 100 and first term equal to the given percentage.
We have,
= (125/100)
= 5/4

= 5: 4

4. Convert each of the following ratios into a percentage:

(i). 37: 100

Solution:-

First convert the given ratio into fraction, and then multiply the fraction by 100 and put the percent sign %.

= (37/100)
= (37/100) × 100
= 37 %

(ii). 16: 25

Solution:-

First convert the given ratio into fraction, and then multiply the fraction by 100 and put the percent sign %.

= (16/25)
= (16/25) × 100
= (16 × 4)
= 64 %

(iii). 3: 5

Solution:-

First convert the given ratio into fraction, and then multiply the fraction by 100 and put the percent sign %.

= (3/5)
= (3/5) × 100
= (3 × 20)
= 60 %

(iv). 5: 4

Solution:-

First convert the given ratio into fraction, and then multiply the fraction by 100 and put the percent sign %.

= (5/4)
= (5/4) × 100
= (5× 25)
= 125 %

5. Convert the each of the following into decimal form:

(i). 45%

Solution:-

First convert the given percentage into fraction and then put the fraction into decimal form.

= (45/100)
= 0.45

(ii). 127%
Solution:-
First convert the given percentage into fraction and then put the fraction into decimal form.
= (127/100)
= 1.27

(iii). 3.6%
Solution:-
First convert the given percentage into fraction and then put the fraction into decimal form.
= (3.6/100)
= (36/1000)
= 0.036

(iv). 0.23%
Solution:-
First convert the given percentage into fraction and then put the fraction into decimal form.
= (0.23/100)
= (23/10000)
= 0.0023

6. Convert each of the following decimals into a percentage:
(i). 0.6
Solution:-
Multiply the given decimal by 100 and put the percent sign %.
We have,
= (0.6 × 100)
= 60%

(ii). 0.42
Solution:-
Multiply the given decimal by 100 and put the percent sign %.
We have,
= (0.42 × 100)
= 42%

(iii). 0.07
Solution:-
Multiply the given decimal by 100 and put the percent sign %.
We have,
= (0.07 × 100)
= 7%

(iv). 0.005
Solution:-
Multiply the given decimal by 100 and put the percent sign %.
We have,
= (0.005 × 100)
= 0.5%

7. Find:
(i). 32% of 425
Solution:-
= (32/100) × 425
= (32/4) × 17
= (8 × 17)
= 136

(ii). [16(2/3)] % of 16
Solution:-
The above question can be written as,
= (50/3) % of 16
= [(50/3) / (100)] × 16
= [(50/3) × (1/100)] × 16
= (1/6) × 16
= (8/3)
= [2(2/3)]

(iii). 6.5 % of 400
Solution:-
The above question can be written as,
= (6.5 / 100) × 400
= (65/1000) × 400
= (65/10) × 4
= (260/10)
= 26

(iv). 136 % of 70
Solution:-
The above question can be written as,
= (136 / 100) × 70
= (136/10) × 7
= (952/10)
= 95.2

(v). 2.8 % of 35

Solution:-
The above question can be written as,
= (2.8/ 100) × 35
= (28/1000) × 35
= (28/200) × 7
= (196/200)
= 0.98

(vi). 0.6 % of 45
Solution:-
The above question can be written as,
= (0.6/ 100) × 45
= (6/1000) × 45
= (6/200) × 9
= (54/200)
= 0.27

8. Find:
(i). 25 % of ₹ 76
Solution:-
We have,
= (25/100) × 76
= (1/4) × 76
= ₹19

(ii). 20 % of ₹ 132
Solution:-
We have,
= (20/100) × 132
= (1/5) × 132
= (132/5)
= ₹26.4

(iii). 7.5 % of 600 m
Solution:-
We have,
= (7.5/100) × 600
= (7.5/1) × 6
= (7.5 × 6)
= 45 m

(iv). [3(1/3)] % of 90 km
Solution:-

We have,

= (10/3) % of 90 km
= [(10/3) × (1/100)] × 90
= (1/30) × 90
= (1/1) × 3
= 3 km

(v). 8.5 % of 5 kg

Solution:-

We have,

= (8.5/100) × 5
= (85/1000) × 5
= (425/1000)
= 0.425 kg
= 425 g ... [∵ 1 kg = 1000g]

(vi). 20 % of 12 liters

Solution:-

We have,

= (20/100) × 12
= (1/5) × 12
= (12/5)
= 2.4 liters

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EXERCISE 10B PAGE: 147

1. Rupesh secures 495 marks out of 750 in his annual examination. Find the percentage of marks obtained by him.

Solution:-

From the question,

Marks secured by Rupesh = 495

Total marks of annual examination = 750

∴The percentage of marks obtained by him = (495/750) × 100

= 66%

Hence, the percentage of marks obtained by Rupesh is 66%.

2. The monthly salary of a typist is ₹ 15625. If he gets an increase of 12%, find his new salary.

Solution:-

From the question,

Monthly salary of typist is = ₹ 15625

The percentage of increase in his salary = 12%

Amount increase = 12% of ₹ 15625

= (12/100) × 15625

= (0.12 × 15625)

= ₹ 1875

∴his new salary = ₹ 15625 + ₹ 1875

= ₹ 1750

3. The excise duty on a certain item has been reduced to ₹ 760 from ₹ 950. Find the reduction percent in the excise duty on that item.

Solution:-

From the question,

The original excise duty on a certain item = ₹ 950

The reduced excise duty on a certain item = ₹ 760

The total amount reduced = (950 – 760)

= ₹ 190

Percentage of reduction = (reduced amount/original amount) × 100

= (190/950) × 100

= (19/95) × 100

= 20%

Hence, the percentage reduction in excise duty on a certain item is 20%

4. 96% of the cost of a TV is ₹ 10464. What is its total cost?

Solution:-

Let the cost of TV be x

96% of the cost of a TV = ₹ 10464

∴ 96 % of ₹ x = ₹ 10464

= (96/100) × x = 10464
= x = (10464 × 100) / (96)
= x = 10900
Hence, the cost of TV is ₹ 10900

5. 70% of the student in a school are boys and the number of girls is 504. Find the number of boys in the school.
Solution:-
Let the total number of students be 100
Then, as per the question 70% of boys = 70
Number of girls = 30
Now, total number of students when the number of girls is 30 = 100
Then, total number of students when the number of girls is 504 = (100/30) × 504
= 1680

Total number of boys = 1680 – 504
= 1176
∴the number of boys in a school is 1176

6. An ore contains 12 % copper. How many kilograms of the ore required to get 69 kg of copper?
Solution:-
Let x kg be the amount of required ore,
Now, 12% of x kg = 69 kg
= (12/100) × (x) = 69 kg
= x = (69 × 100) / 12
= x = 575 kg
Hence, 575 kg of ore is required to get 69 kg copper.

7. 36 % of the maximum marks is required to pass a test. A student gets 123 marks and is declared fail by 39 marks. Find the maximum marks.
Solution:-
Let the x be the maximum marks,
Passing marks for the test = (123 + 39) = 162
Then, 36% of x = 162
= (36/100) × x = 162
= x = (162 × 100) / 36
= x = 450
∴the maximum marks is 450.

8. A fruit-seller had some apples. He sells 40% of them and still has 420 apples. Find the number of apples he had originally.
Solution:-
Assume that the fruit seller had 100 apples initially.
He sell 40% of them = 40 apples

Left out apples = (100 – 40) = 60
In initial amount of apples if 60 of them are remaining = 100
In initial amount of apples if 1 of them is remaining = (100/60)
In initial amount of apples if 420 of them are remaining = (100/60) × (420)
= (100 ×7)
= 700
∴the fruit seller originally had 700 apples.

9. In an examination, 72% of the total examinees passed. If the number of failures is 392, find the total number of examinees.
Solution:-
Assume that 100 candidates took the examination.
In that 72% of them are passed = 72 candidates
In that failed candidates = (100 – 72) = 28
Number of candidates if 28 of them failed = 100
Number of candidates if 392 of them failed = (100/28) × 392
= 1400
∴the total number of examinees is 1400

10. After deducting a commission of 5%, a moped costs ₹ 15200. What is its gross value?
Solution:-
Let the gross value of the moped is ₹ x.
Commission on the moped = 5%
The price of moped after deducting the commission = ₹ (x – 5% of x)
= ₹ (x – [(5/100) × (x)])
= ₹ (x – (5x/100))
= ₹ (100x – 5x)/100
= ₹ (95x/100)
Cost of moped after deducting the commission = ₹ 15200
Then,
= (95x/100) = 15200
= x = (15200 × 100)/ 95
= x = (160 × 100)
= x = 16000
∴the gross value of the moped is ₹ 16000

11. Gunpowder contains 75% of nitre and 10% of sulphur, and the rest of it is charcoal. Find the amount of charcoal in 8 kg of gunpowder.
Solution:-
The amount of gunpowder = 8 kg = 8000g ... [WKT 1 kg = 1000g]
Quantity of nitre in gunpowder = 75% of 8000g
= (75/100) × (8000)
= (75 ×80)

= 6000g = 6 kg

Quantity of sulphur in gunpowder = 10% of 8000g
= (10/100) × 8000
= (10 × 80)
= 800g = 0.8 kg

The quantity of charcoal in gunpowder = [8000 – (6000 + 800)]
= [8000 – 6800]
= 1200g
= 1.2 kg

∴the quantity of charcoal in 8 kg of gunpowder is 1.2 kg

12. Chalk contains 3% of carbon, 10% of calcium and 12% of oxygen. Find the amount in grams of each of these substance in 1 kg of chalk.

Solution:-

From the question,

The amount of chalk = 1 kg = 1000 g

We have,

Amount of carbon in it = 3% of 1000 g
= (3/100) × 1000
= (3 × 10)
= 30 g

Amount of calcium in it = 10 % of 1000 g
= (10 /100) × 1000
= (10 × 10)
= 100 g

Amount of oxygen in it = 12% of 1000 g
= (12/100) × (1000)
= (12 × 10)
= 120 g

13. Sonal went school for 219 days in a full year. If her attendance is 75%, find the number of days on which the school was open.

Solution:-

Let the number of days on which school was open be x.

The total number of days when sonal went to school = 219

Her attendance = 75%

Then,

= 75% of x = 219
= (75/100) × x = 219
= x = (219 × 100) / 75
= x = 292 days

∴the number of days on which school was open for 292.

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EXERCISE 10C PAGE: 148

Mark against the correct answer in each of the following:

1. (3/4) as rate percent is

(a) 7.5% (b) 75% (c) 0.75% (d) none of these

Solution:-

(b) 75%

Because,

= (3/4) × 100

= (300/4)

= 75%

2. The ratio 2: 5 as rate percent is

(a) 4% (b) 0.4% (c) 40% (d) 14%

Solution:-

(c) 40%

Because,

= (2/5) ×100

= (2/1) × 20

= 40%

3. [8(1/3)] % expressed as e fraction, is

(a) (25/3) (b) (3/5) (c) (1/12) (d) (1/4)

Solution:-

(c) (1/12)

Because,

= (25/3) %

= (25/3) × (1/100)

= (1/12)

4. If x% of 75 = 9, then the value of x is

(a) 16 (b) 14 (c) 12 (d) 8

Solution:-

(c) 12

Because,

= (x/100) × 75 = 9

= x = (9 × 100) / 75

= x = 12

5. What percent of (2/7) is (1/35)?

(a) 25% (b) 20% (c) 15% (d) 10%

Solution:-

(d) 10%

Because,
Assume x be the required percent
= x% of (2/7) = (1/35)
= (x/100) × (2/7) = (1/35)
= x = (100 × 7)/ (35 × 2)
= x = (50 × 1)/ (5 × 1)
= x = 10%

6. What percent of 1 day is 36 minutes?
(a) 25% **(b) 2.5%** **(c) 3.6%** **(d) 0.25%**
Solution:-
(b) 2.5%
Because,
Assume x be the percent of 1 day is 36 minutes
We know that, 1 day = 24 hours
1 hour = 60 minutes
= 60 × 24
= 1440 minutes
Now,
= (x % of 1440) = 36
= (x/100) × 1440 = 36
= x = (36 × 100) /1440
= x = 2.5%

7. A number increased by 20% gives 42. The number is
(a) 35 **(b) 28** **(c) 36** **(d) 30**
Solution:-
Because,
(a) 35
Let the required number be x
Now,
= x + 20% of x = 42
= [x + {(20/100) × x}] = 42
= [x + {20x/100}] = 42
= [x + {x/5}] = 42
= [(5x + x)/5] = 42
= [6x/5] = 42
= x = (42 ×5)/6
= x = (7 × 5)
= x = 35

8. A number decreased by 8% gives 69. The number is
(a) 80 **(b) 75** **(c) 85** **(d) none of these**
Solution:-

(b) 75
Because,
Let the required number be x
Now,

= x - 8% of x = 69
= [x - {(8/100) × x}] = 69
= [x - {8x/100}] = 69
= [x - {2x/25}] = 69
= [(25x - 2x)/25] = 69
= [23x/25] = 69
= x = (69 × 25)/23
= x = (75)

9. An ore contains 5% copper. How much ore is required to obtain 400 g of copper?
(a) 2 kg (b) 4 kg (c) 6 kg (d) 8 kg
Solution:-
(d) 8 kg
Because,
Assume x be the required amount of ore.

= 5% of x kg = 0.4 kg ... [WKT 1 kg = 1000g]
= (5/100) × x = 0.4
= x = (0.4 × 100) /5
= x = 40/5
= x = 8 kg

10. After deducting a commission of 10% a TV costs ₹ 18000. What is its gross value?
(a) ₹ 18800 (b) ₹ 20000 (c) ₹ 19800 (d) none of these
Solution:-
(b) ₹ 20000
Because,
Let the gross value of TV be ₹ x
Commission on TV = 10%
Price of the TV after deducting the commission = ₹ (x – 10% of x)
= (x – ((10/100) × x))
= (x – (x/10))
= (10x – x)/10
= (9x/10)
The price of TV after deducting the commission = ₹ 18000
= (9x/10) = 18000
= x = (18000 ×10) / 9
= x = (2000 × 10)
= x = ₹ 20000

11. On increasing the salary of a man by 25%, it becomes ₹ 20000. What was his original salary?
(a) ₹ 15000 (b) ₹ 16000 (c) ₹ 18000 (d) ₹ 25000
Solution:-
(b) ₹ 16000
Because,
Let original salary of man be ₹ x
Increases salary him = 25%
The value increased = 25% of ₹ x
= (25/100) × x
= (25x/100)
= (x/4)
Salary after increment = (x + (x/4))
= (4x + x)/4
= (5x/4)
His increased salary = ₹ 20000
= (5x/4) = 20000
= x = (20000 × 4) / 5
= x = 4000 × 4
= x = ₹ 16000