

PERCENTAGE

MATHEMATICS MCQs

50 Fully Solved Questions

Ticked | Highlighted | Fully Explained

Practice Book

Learn smart. Solve fast. Score high.

Question 1

What is 25% of 480?

A) 120 ✓

B) 100

C) 140

D) 160

Correct Answer: A) 120 ✓

Explanation

Concept: *25% means 25/100 = 1/4.*

Step 1: 25% of 480 = (25/100) x 480.

Step 2: = 480 / 4 = 120.

Hence, the answer is option A) 120 ✓

Question 2

What is 15% of 360?

A) 44

B) 64

C) **54** ✓

D) 74

Correct Answer: C) 54 ✓

Explanation

Concept: *x% of N = (x/100) x N.*

Step 1: 10% of 360 = 36.

Step 2: 5% of 360 = 18.

Step 3: 15% = 36 + 18 = 54.

Hence, the answer is option C) 54 ✓

Question 3

What percent of 180 is 45?

A) 20%

B) 25%

C) 30%

D) 35%

Correct Answer: B) 25%

Explanation

Concept: *Percentage = (Part / Whole) x 100.*

Step 1: (45 / 180) x 100.

Step 2: 45/180 = 1/4, and 1/4 x 100 = 25%.

Hence, the answer is option B) 25%

Question 4

Express 3/8 as a percentage.

A) 35%

B) 40%

C) 42.5%

D) **37.5%** ✓

Correct Answer: D) 37.5% ✓

Explanation

Concept: *To convert a fraction to a percentage, multiply it by 100.*

Step 1: (3/8) x 100 = 300/8.

Step 2: 300 / 8 = 37.5%.

Hence, the answer is option D) 37.5% ✓

Question 5

Convert 0.65 into a percentage.

A) 6.5%

B) 0.65%

C) **65%** ✓

D) 650%

Correct Answer: C) 65% ✓

Explanation

Concept: *To convert a decimal to a percentage, multiply by 100 (move the decimal point two places right).*

Step 1: 0.65 x 100 = 65.

Step 2: So 0.65 = 65%.

Hence, the answer is option C) 65% ✓

Question 6

If 20% of a number is 48, what is the number?

A) 240

B) 200

C) 220

D) 260

Correct Answer: A) 240

Explanation

Concept: *If x% of N = V, then N = V x 100 / x.*

Step 1: N = 48 x 100 / 20.

Step 2: N = 4800 / 20 = 240.

Check: 20% of 240 = 48. Correct.

Hence, the answer is option A) 240

Question 7

Increase 250 by 12%. What is the new value?

A) 270

B) 275

C) 285

D) **280** ✓

Correct Answer: D) 280 ✓

Explanation

Concept: *New value = Original x (100 + x)/100 for an increase of x%.*

Step 1: 12% of 250 = 30.

Step 2: 250 + 30 = 280.

Hence, the answer is option D) 280 ✓

Question 8

Decrease 800 by 15%. What is the new value?

A) 660

B) 680

C) 670

D) 690

Correct Answer: B) 680

Explanation

Concept: *New value = Original x (100 - x)/100 for a decrease of x%.*

Step 1: 15% of 800 = 120.

Step 2: 800 - 120 = 680.

Hence, the answer is option B) 680

Question 9

The price of an item rises from Rs. 40 to Rs. 50. What is the percentage increase?

A) 12.5%

B) 25% ✓

C) 20%

D) 30%

Correct Answer: B) 25% ✓

Explanation

Concept: *% Increase = (Increase / Original) x 100.*

Step 1: Increase = 50 - 40 = 10.

Step 2: (10 / 40) x 100 = 25%.

Note: always divide by the ORIGINAL value (40), not the new one.

Hence, the answer is option B) 25% ✓

Question 10

The price of an item falls from Rs. 60 to Rs. 45. What is the percentage decrease?

A) 15%

B) 20%

C) 30%

D) 25%

Correct Answer: D) 25%

Explanation

Concept: *% Decrease = (Decrease / Original) x 100.*

Step 1: Decrease = 60 - 45 = 15.

Step 2: (15 / 60) x 100 = 25%.

Hence, the answer is option D) 25%

Question 11

What is 40% of 50% of 600?

A) 120 ✓

B) 100

C) 140

D) 160

Correct Answer: A) 120 ✓

Explanation

Concept: *Take the percentages one after the other.*

Step 1: 50% of 600 = 300.

Step 2: 40% of 300 = 120.

Shortcut: 0.4 x 0.5 x 600 = 120.

Hence, the answer is option A) 120 ✓

Question 12

If 35% of a number is 21, find the number.

A) 50

B) 70

C) **60**

D) 80

Correct Answer: C) 60

Explanation

Concept: *N = V x 100 / x.*

Step 1: N = 21 x 100 / 35.

Step 2: N = 2100 / 35 = 60.

Check: 35% of 60 = 21. Correct.

Hence, the answer is option C) 60

Question 13

In a class of 40 students, 60% are girls. How many boys are in the class?

A) 12

B) 14

C) 18

D) 16 ✓

Correct Answer: D) 16 ✓

Explanation

Concept: *Boys % = 100% - Girls %.*

Step 1: Boys = 100 - 60 = 40%.

Step 2: 40% of 40 = 16 boys.

Hence, the answer is option D) 16 ✓

Question 14

A salary of Rs. 20,000 is increased by 10% and then decreased by 10%. What is the final salary?

A) Rs. 19,900

B) **Rs. 19,800** ✓

C) Rs. 20,000

D) Rs. 20,200

Correct Answer: B) Rs. 19,800 ✓

Explanation

Concept: *Successive changes must be applied one after the other, not added or cancelled.*

Step 1: After +10%: 20,000 x 1.10 = 22,000.

Step 2: After -10%: 22,000 x 0.90 = 19,800.

Shortcut: net change = -(10 x 10)/100 = -1%, and 1% of 20,000 = 200, so 19,800.

Hence, the answer is option B) Rs. 19,800 ✓

Question 15

Two successive discounts of 20% and 10% are equal to a single discount of:

A) 25%

B) 27%

C) **28%** ✓

D) 30%

Correct Answer: C) 28% ✓

Explanation

Concept: *Single equivalent = a + b - ab/100.*

Step 1: 20 + 10 - (20 x 10)/100 = 30 - 2.

Step 2: = 28%.

Check: 0.80 x 0.90 = 0.72, so the customer pays 72%, a discount of 28%.

Hence, the answer is option C) 28% ✓

Question 16

A number is increased by 20% and then decreased by 20%. What is the net change?

A) 4% decrease

B) No change

C) 4% increase

D) 2% decrease

Correct Answer: A) 4% decrease

Explanation

Concept: *If a number changes by +x% then -x%, the net change is always a decrease of $x^2/100$ %.*

Step 1: Let the number be 100. After +20%: 120.

Step 2: After -20% of 120 (= 24): 96.

Step 3: 100 to 96 is a 4% decrease.

Hence, the answer is option A) 4% decrease

Question 17

If A is 25% more than B, then B is what percent less than A?

A) 20% ✓

B) 15%

C) 25%

D) 30%

Correct Answer: A) 20% ✓

Explanation

Concept: *Rule: if A is x% more than B, then B is x/(100 + x) x 100 % less than A.*

Step 1: Let B = 100, so A = 125.

Step 2: Difference = 25, measured against A (125).

Step 3: (25 / 125) x 100 = 20%.

Hence, the answer is option A) 20% ✓

Question 18

If A is 20% less than B, then B is what percent more than A?

A) 20%

B) 22.5%

C) **25%** ✓

D) 30%

Correct Answer: C) 25% ✓

Explanation

Concept: *Rule: if A is x% less than B, then B is x/(100 - x) x 100 % more than A.*

Step 1: Let B = 100, so A = 80.

Step 2: Difference = 20, measured against A (80).

Step 3: (20 / 80) x 100 = 25%.

Hence, the answer is option C) 25% ✓

Question 19

A student scores 72 marks out of 90. What is his percentage?

A) 75%

B) 80% ✓

C) 85%

D) 90%

Correct Answer: B) 80% ✓

Explanation

Concept: *Percentage = (Marks obtained / Total marks) x 100.*

Step 1: (72 / 90) x 100.

Step 2: 72/90 = 4/5 = 0.8, and 0.8 x 100 = 80%.

Hence, the answer is option B) 80% ✓

Question 20

A student needs 40% of 600 marks to pass. He got 210 marks. What is the result?

A) Passes by 30 marks

B) Fails by 20 marks

C) Passes by 10 marks

D) Fails by 30 marks

Correct Answer: D) Fails by 30 marks

Explanation

Concept: *Find the passing marks first, then compare.*

Step 1: Passing marks = 40% of 600 = 240.

Step 2: He got 210, which is less than 240.

Step 3: 240 - 210 = 30, so he fails by 30 marks.

Hence, the answer is option D) Fails by 30 marks

Question 21

The population of a town is 20,000 and grows 5% every year. What will it be after 2 years?

A) 22,000

B) 22,100

C) 22,050 ✓

D) 22,500

Correct Answer: C) 22,050 ✓

Explanation

Concept: *Compound growth: $P \times (1 + r/100)^n$.*

Step 1: After year 1: 20,000 x 1.05 = 21,000.

Step 2: After year 2: 21,000 x 1.05 = 22,050.

Note: 22,000 is wrong because it adds 5% of the original twice instead of compounding.

Hence, the answer is option C) 22,050 ✓

Question 22

The population of a village is 50,000 and falls 10% every year. What will it be after 2 years?

A) 40,500

B) 40,000

C) 41,000

D) 45,000

Correct Answer: A) 40,500

Explanation

Concept: *Compound decrease: $P \times (1 - r/100)^n$.*

Step 1: After year 1: 50,000 x 0.90 = 45,000.

Step 2: After year 2: 45,000 x 0.90 = 40,500.

Hence, the answer is option A) 40,500

Question 23

The price of sugar rises by 25%. By what percent must a family cut its consumption so that its expenditure stays the same?

A) 15%

B) 25%

C) 30%

D) 20% ✓

Correct Answer: D) 20% ✓

Explanation

Concept: *Expenditure = Price x Consumption. If expenditure is fixed, consumption must change inversely.*

Step 1: Let old price = 100, new price = 125.

Step 2: New consumption = 100/125 = 0.8 of the old.

Step 3: Reduction = 1 - 0.8 = 20%.

Formula: reduction = x/(100 + x) x 100 = 25/125 x 100 = 20%.

Hence, the answer is option D) 20% ✓

Question 24

In an election between two candidates, one gets 45% of the votes and loses by 600 votes. What is the total number of votes?

A) 5,000

B) **6,000** ✓

C) 5,500

D) 6,500

Correct Answer: B) 6,000 ✓

Explanation

Concept: *With two candidates the votes add up to 100%.*

Step 1: Winner got 100 - 45 = 55%.

Step 2: Margin = 55% - 45% = 10% of total.

Step 3: 10% of total = 600, so total = 6,000.

Hence, the answer is option B) 6,000 ✓

Question 25

A 40 kg solution contains 15% salt. How much salt does it contain?

A) 5 kg

B) **6 kg** ✓

C) 7 kg

D) 8 kg

Correct Answer: B) 6 kg ✓

Explanation

Concept: *Amount of an ingredient = Percentage x Total quantity.*

Step 1: 15% of 40 = (15/100) x 40.

Step 2: = 6 kg.

Hence, the answer is option B) 6 kg ✓

Question 26

How much pure water must be added to 20 litres of a 25% acid solution to make it a 20% solution?

A) 3 litres

B) 4 litres

C) 6 litres

D) 5 litres ✓

Correct Answer: D) 5 litres ✓

Explanation

Concept: *Adding water does not change the amount of acid.*

Step 1: Acid = 25% of 20 = 5 litres.

Step 2: For a 20% solution: 5 = 20% of new volume, so new volume = 25 litres.

Step 3: Water to add = 25 - 20 = 5 litres.

Hence, the answer is option D) 5 litres ✓

Question 27

An article is bought for Rs. 500 and sold for Rs. 600. What is the profit percent?

A) 20%

B) 10%

C) 15%

D) 25%

Correct Answer: A) 20%

Explanation

Concept: *Profit % = (Profit / Cost Price) x 100.*

Step 1: Profit = 600 - 500 = 100.

Step 2: (100 / 500) x 100 = 20%.

Hence, the answer is option A) 20%

Question 28

An article is bought for Rs. 800 and sold for Rs. 680. What is the loss percent?

A) 10%

B) 12%

C) **15%** ✓

D) 20%

Correct Answer: C) 15% ✓

Explanation

Concept: *Loss % = (Loss / Cost Price) x 100.*

Step 1: Loss = 800 - 680 = 120.

Step 2: (120 / 800) x 100 = 15%.

Hence, the answer is option C) 15% ✓

Question 29

The marked price of a shirt is Rs. 1,200 and a 25% discount is offered. What is the selling price?

A) Rs. 850

B) Rs. 950

C) Rs. 1,000

D) Rs. 900 ✓

Correct Answer: D) Rs. 900 ✓

Explanation

Concept: *Selling price = Marked price x (100 - Discount%)/100.*

Step 1: Discount = 25% of 1,200 = 300.

Step 2: Selling price = 1,200 - 300 = Rs. 900.

Hence, the answer is option D) Rs. 900 ✓

Question 30

A trader sells an item for Rs. 1,500 at a 20% profit. What is the cost price?

A) Rs. 1,200

B) **Rs. 1,250** ✓

C) Rs. 1,300

D) Rs. 1,350

Correct Answer: B) Rs. 1,250 ✓

Explanation

Concept: *Cost price = Selling price x 100 / (100 + Profit%).*

Step 1: SP = 120% of CP = 1,500.

Step 2: CP = 1,500 x 100 / 120 = Rs. 1,250.

Check: 20% of 1,250 = 250 and 1,250 + 250 = 1,500. Correct.

Hence, the answer is option B) Rs. 1,250 ✓

Question 31

An article is sold at a 10% loss for Rs. 900. What is its cost price?

A) Rs. 950

B) Rs. 1,050

C) Rs. 1,000 ✓

D) Rs. 1,100

Correct Answer: C) Rs. 1,000 ✓

Explanation

Concept: *Cost price = Selling price x 100 / (100 - Loss%).*

Step 1: SP = 90% of CP = 900.

Step 2: CP = 900 x 100 / 90 = Rs. 1,000.

Hence, the answer is option C) Rs. 1,000 ✓

Question 32

A shopkeeper marks goods 20% above cost price and then allows a 10% discount. What is his profit percent?

A) 8% ✓

B) 6%

C) 10%

D) 12%

Correct Answer: A) 8% ✓

Explanation

Concept: *Chain the two percentages by multiplying.*

Step 1: Let CP = 100, so Marked Price = 120.

Step 2: Discount 10% of 120 = 12, so SP = 108.

Step 3: Profit = 108 - 100 = 8, which is 8%.

Hence, the answer is option A) 8% ✓

Question 33

What is 12.5% of 640?

A) 80 ✓

B) 70

C) 75

D) 85

Correct Answer: A) 80 ✓

Explanation

Concept: *12.5% = 1/8.*

Step 1: 12.5% = 12.5/100 = 1/8.

Step 2: 640 / 8 = 80.

Hence, the answer is option A) 80 ✓

Question 34

What is 0.5% of 2,000?

A) 1

B) 5

C) 10

D) 100

Correct Answer: C) 10

Explanation

Concept: *0.5% = 0.5/100 = 0.005.*

Step 1: 1% of 2,000 = 20.

Step 2: 0.5% is half of 1%, so 20 / 2 = 10.

Hence, the answer is option C) 10

Question 35

Express 7/20 as a percentage.

A) 30%

B) **35%** ✓

C) 40%

D) 45%

Correct Answer: B) 35% ✓

Explanation

Concept: *Make the denominator 100 by scaling.*

Step 1: Multiply top and bottom by 5: 7/20 = 35/100.

Step 2: 35/100 = 35%.

Hence, the answer is option B) 35% ✓

Question 36

What is 150% of 80?

A) 100

B) 140

C) 160

D) 120

Correct Answer: D) 120

Explanation

Concept: *A percentage above 100% means more than the original amount.*

Step 1: 150% = 1.5.

Step 2: 1.5 x 80 = 120.

Hence, the answer is option D) 120

Question 37

If 60% of x equals 30% of y, what is the ratio x : y?

A) 2 : 1

B) 3 : 2

C) **1 : 2** ✓

D) 2 : 3

Correct Answer: C) 1 : 2 ✓

Explanation

Concept: *Write the statement as an equation and compare.*

Step 1: 0.60x = 0.30y.

Step 2: y = 0.60x / 0.30 = 2x.

Step 3: x : y = x : 2x = 1 : 2.

Hence, the answer is option C) 1 : 2 ✓

Question 38

x is 40% of y, and y is 50% of z. What percent of z is x?

A) 20%

B) 10%

C) 25%

D) 30%

Correct Answer: A) 20%

Explanation

Concept: *Substitute one relation into the other.*

Step 1: x = 0.40y and y = 0.50z.

Step 2: x = 0.40 x 0.50z = 0.20z.

Step 3: So x is 20% of z.

Hence, the answer is option A) 20%

Question 39

A earns 50% more than B. If B earns Rs. 8,000, how much does A earn?

A) Rs. 11,000

B) Rs. 12,500

C) Rs. 13,000

D) Rs. 12,000 ✓

Correct Answer: D) Rs. 12,000 ✓

Explanation

Concept: *'50% more than B' means 150% of B.*

Step 1: 50% of 8,000 = 4,000.

Step 2: A = 8,000 + 4,000 = Rs. 12,000.

Hence, the answer is option D) Rs. 12,000 ✓

Question 40

Out of 5,000 students, 56% passed an exam. How many students failed?

A) 2,000

B) **2,200** ✓

C) 2,400

D) 2,800

Correct Answer: B) 2,200 ✓

Explanation

Concept: *Fail % = 100% - Pass %.*

Step 1: Fail % = 100 - 56 = 44%.

Step 2: 44% of 5,000 = 0.44 x 5,000 = 2,200.

Hence, the answer is option B) 2,200 ✓

Question 41

A man spends 75% of his income and saves Rs. 6,000. What is his income?

A) Rs. 20,000

B) **Rs. 24,000** ✓

C) Rs. 22,000

D) Rs. 26,000

Correct Answer: B) Rs. 24,000 ✓

Explanation

Concept: *Savings % = 100% - Expense %.*

Step 1: Savings = 100 - 75 = 25% of income.

Step 2: 25% of income = 6,000, so income = 6,000 x 4 = Rs. 24,000.

Hence, the answer is option B) Rs. 24,000 ✓

Question 42

A man's income is Rs. 50,000 and expenses are Rs. 40,000. Income rises 20% and expenses rise 10%. What are his new savings?

A) Rs. 14,000

B) Rs. 15,000

C) Rs. 18,000

D) Rs. 16,000 ✓

Correct Answer: D) Rs. 16,000 ✓

Explanation

Concept: *Savings = Income - Expenses, so update each separately.*

Step 1: New income = 50,000 x 1.20 = 60,000.

Step 2: New expenses = 40,000 x 1.10 = 44,000.

Step 3: New savings = 60,000 - 44,000 = Rs. 16,000.

Hence, the answer is option D) Rs. 16,000 ✓

Question 43

The length of a rectangle is increased by 20% and its breadth by 10%. What is the percentage increase in area?

A) 32% ✓

B) 30%

C) 30.5%

D) 35%

Correct Answer: A) 32% ✓

Explanation

Concept: *Area = Length x Breadth, so the factors multiply.*

Step 1: New area = 1.20 x 1.10 = 1.32 times old area.

Step 2: Increase = 32%.

Formula: a + b + ab/100 = 20 + 10 + 2 = 32%.

Hence, the answer is option A) 32% ✓

Question 44

The side of a square is increased by 10%. By what percent does its area increase?

A) 10%

B) 20%

C) **21%** ✓

D) 22%

Correct Answer: C) 21% ✓

Explanation

Concept: *Area of a square = side^2.*

Step 1: New side = 1.10 x old side.

Step 2: New area = $(1.10)^2$ = 1.21 times old area.

Step 3: Increase = 21%.

Hence, the answer is option C) 21% ✓

Question 45

The radius of a circle is decreased by 10%. By what percent does its area decrease?

A) 10%

B) 20%

C) 21%

D) **19%** ✓

Correct Answer: D) 19% ✓

Explanation

Concept: *Area of a circle = pi x r^2, so area depends on the square of the radius.*

Step 1: New radius = 0.90r.

Step 2: New area = $(0.90)^2$ = 0.81 of old area.

Step 3: Decrease = 1 - 0.81 = 19%.

Hence, the answer is option D) 19% ✓

Question 46

In an election 5,000 people are registered. 20% did not vote, and 30% of the votes cast were invalid. How many valid votes were there?

A) 2,500

B) **2,800** ✓

C) 3,000

D) 3,500

Correct Answer: B) 2,800 ✓

Explanation

Concept: *Apply each percentage to the quantity left after the previous step.*

Step 1: Votes cast = 80% of 5,000 = 4,000.

Step 2: Valid votes = 70% of 4,000 = 2,800.

Hence, the answer is option B) 2,800 ✓

Question 47

The price of an article is increased by 20% and later decreased by 25%. What is the net change?

A) 5% decrease

B) 5% increase

C) **10% decrease** ✓

D) 10% increase

Correct Answer: C) 10% decrease ✓

Explanation

Concept: *Multiply the successive factors.*

Step 1: Factor for +20% = 1.20 and for -25% = 0.75.

Step 2: 1.20 x 0.75 = 0.90.

Step 3: Final price is 90% of the original, a 10% decrease.

Hence, the answer is option C) 10% decrease ✓

Question 48

A fruit seller sells 40% of his apples, then 25% of the remaining. If 270 apples are left, how many did he start with?

A) 600

B) 500

C) 550

D) 650

Correct Answer: A) 600

Explanation

Concept: *Work with what remains after each sale.*

Step 1: After first sale 60% remain; after second, 75% of that remain.

Step 2: Remaining = 0.60 x 0.75 = 0.45 of the total.

Step 3: 0.45 x Total = 270, so Total = 270 / 0.45 = 600.

Hence, the answer is option A) 600

Question 49

What percent of 5 is 3?

A) 60%

B) 50%

C) 55%

D) 65%

Correct Answer: A) 60%

Explanation

Concept: *Percentage = (Part / Whole) x 100.*

Step 1: (3 / 5) x 100.

Step 2: = 0.6 x 100 = 60%.

Hence, the answer is option A) 60%

Question 50

A machine is worth Rs. 50,000 now and loses 20% of its value every year. What will it be worth after 2 years?

A) Rs. 30,000

B) Rs. 34,000

C) Rs. 32,000 ✓

D) Rs. 36,000

Correct Answer: C) Rs. 32,000 ✓

Explanation

Concept: *Depreciation: $P \times (1 - r/100)^n$.*

Step 1: After year 1: 50,000 x 0.80 = 40,000.

Step 2: After year 2: 40,000 x 0.80 = Rs. 32,000.

Note: Rs. 30,000 is wrong because it subtracts 20% of the original twice.

Hence, the answer is option C) Rs. 32,000 ✓

Key Formulas to Remember

1. Percentage = (Part / Whole) x 100
2. % Change = (Change / Original) x 100
3. Successive changes: a + b + ab/100
4. Profit % = (Profit / CP) x 100
5. Compound change: P x $(1 +/- r/100)^n$

Thank You!

Keep practising every day and percentages will become your strongest topic.