SIMPLE INTEREST - SOLVED EXAMPLES

Advertisements

Q 1 - **Adam borrowed some money at the rate of 6% p.a. for the first two years, at the rate of 9% p.a. for the next three years, and at the rate of 14% p.a. for the period beyond five years. If he pays a total interest of Rs. 11,400 at the end of nine years, how much money did he borrow?**

A - 12,000

B - 13,000

C - 14,500

D - 12,500

Answer - A

Explanation

```
Let the sum borrowed be Z. Then,
(Zx6x2/100) + (Zx9x3/100) + (Zx14x4/100) = 11400
Therefore, 3Z/25 + 27Z/100 + 14Z/25) = 11400
? 95Z/100 = 11400
Z = (11400x100/95) = 12000
```

Q 2 - **A certain sum of money amounts to Rs. 1008 in 2 years and to Rs. 1164 in $3\frac{1}{2}$ years. find the sum and the rate of interest?**

A - Rs. 800, Rate 14%

B - Rs. 850, Rate 12%

C - Rs. 800, Rate 13%

D - Rs. 500, Rate 13%

Answer - C

Explanation

```
S.I. for 1¹/₂years = Rs. (1164-1008)
=156
S.I. for 2 years = Rs. (156 x ²/₃ x 2) = Rs. 208
Principal = Rs. (1008 - 208) = Rs. 800
Now, P = 800, T = 2, and S.I. = 208
Rate = (100x208/800x2)% = 13%
```

Q 3 - **At what rate percent per annum will a sum of money double in 16 years?**

A - 5%

B - 3%

C - 4%

D - $6\frac{1}{4}\%$

Answer - D

Explanation

```
Let Principal = P, Then,
S.I. = P and T = 16 years
Rate = (100xP/Px16)%
= 6(1/4)
```

Q 4 - The simple interest on a certain sum of money for $2\frac{1}{2}$ years at 12% per annum is Rs. 40 less than the simple interest on the same sum for $3\frac{1}{2}$ years at 10% per annum. Find the sum?

A - 400

B - 800

C - 1600

D - 500

Answer - B

Explanation

```
Let the sum be Z then,
(Zx10x7/100x2) - (Zx12x5/100x2)
=40
7Z/20 - 3Z/10 = 40
Z = 40 x 20
The sum is Rs. 800
```

Q 5 - A sum was put at simple interest at a certain rate for 3 years. Had it been put at 2% higher rate, it would have fetched Rs. 360 more. Find the sum?

A - 10000

B - 6000

C - 15000

D - 6500

Answer - B

Explanation

```
Let the sum be = P and original rate = R. Then,
(Px(R+2)x3/100) - (PxRx3/100) = 360
3PR + 6P - 3PR =36000
6P = 36000
P=6000
```

Q 6 - A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. he immediately lends it to another person at $6\frac{1}{4}\%$ p.a. for 2 years find his gain in the transaction per year?

A - 112

B - 112.50

C - 110

D - 100

Answer - B

Explanation

```
Gain in 2 years = Rs. [(5000x²⁵ˣ⁄₄²⁄₁₀₀) − (⁵⁰⁰ˣ⁴ˣ²⁄₁₀₀)]
= Rs. (625 − 400)
= Rs. 225
Gain in 1 year = Rs. (²²⁵⁄₂)
= Rs. 112.50
```

Q 7 - How much time for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

A - 4

B - 5

C - 4.5

D - 6

Answer - A

Explanation

```
Time = (¹⁰⁰ ˣ ⁸¹⁄₄₅₀ ₓ ₄.₅)
= 4 years
```

Q 8 - A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?

A - 6

B - 6.5

C - 5

D - 6.75

Answer - A

Explanation

```
S.I. = Rs. (15500 − 12500) = Rs. 3000
Rate = (¹⁰⁰ ˣ ³⁰⁰⁰⁄₁₂₅₀₀ ₓ ₄)
= 6%
```

Q 9 - Reema took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of loan period, what was the rate of interest?

A - 10

B - 5

C - 6

D - 7

Answer - C

Explanation

```
Let Rate = R% and time also R years. Then,
(1200 x R x R/100) = 432
= 12R2 = 432
R2 = 36
R=6
```

Q 10 - A man took a loan from a bank at the rate of 12% p.a. simple interest. After 3 years he had to pay Rs. 5400 interest only for the period. The principal amount borrowed b him was?

A - 10000

B - 15000

C - 15500

D - 6500

Answer - B

Explanation

```
Principal = Rs. (100 x 5400/12 x 3)
= Rs. 15000
```

Q 11 - what is the present worth of Rs. 132 due in 2 years at 5% simple interest per annum?

A - 120

B - 150

C - 155

D - 650

Answer - A

Explanation

```
Let the present worth be Rs. z then,
S.I. = Rs. (132 – z)
therefore (zx5x2/100) = 132 – z
10z = 13200 – 100z
110z = 13200
z = 120
```

Q 12 - A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 p.c.p.a in 5 years. What is the sum?

A - 10000

B - 8500

C - 9000

D - 8925

Answer - B

Explanation

```
Principal = (100 x 4016.25/9 x 5)
(401625/45)
= 8925
```

Q 13 - Rs. 800 becomes Rs. 956 in 3 years at a certain rate of simple interest. If the rate of interest is increased by 4%, What amount will Rs. 800 become in 3 years?

A - 10000

B - 1025

C - 15500

D - 6500

Answer - B

Explanation

```
S.I. = (956 – 800) = 156
Rate = (100 x 156/800 x 3)
New Rate = (6¹/2 + 4)
= 10 ¹/2
New S.I. = Rs. (800 x 21 x/2 ³/100)
=252
therefore New Amount = Rs. (800 + 252) = 1025
```

Q 14 - A certain amount earns simple interest of Rs. 1750 after 7 years. Had the interest been 2 % more, how much more interest would it have earned?

A - 35

B - Data is inadequate

C - 245

D - 350

Answer - B

Explanation

```
We need to know the S.I., principal and time to find the rate.
Since the principal is not given, so the data is inadequate.
```

Q 15 - In how many years, Rs. 150 will produce the simple interest @ 8% as Rs. 800 produce in 3 years @ 4($\frac{1}{2}$?

A - 6

B - 8

C - 9

D - 8

Answer - C

Explanation

```
P = Rs. 800 R = 4 ¹⁄₂ = (⁹⁄₂ T = 3 years
S.I. = Rs. (800 x ⁹ ˣ ⁄₂ ³⁄₁₀₀) = 108 <
Now, P = Rs 150, S.I. = Rs. 108, R = 8%
Time = (¹⁰⁰ ˣ ¹⁰⁸⁄₁₅₀ ₓ ₈) = 9 years
```

Q 16 - A sum invested at 5% simple interest per annum grows to Rs. 504 in 4 years. The same amount at 10% simple interest per annum in $2\frac{1}{2}$ years will grow to?

A - 420

B - 525

C - 450

D - 500

Answer - B

Explanation

```
Let the sum be Rs. z. Then,
S.I. = Rs. (504 – z)
therefore (ᶻ ˣ ⁵ ˣ ⁴⁄₁₀₀) = 504 – z
20z = 50400 – 100z
120z = 50400
z = 420
Now P = 420, R = 10%, T = ⁵⁄₂
S.I. = (⁴²⁰ ˣ ¹⁰ ˣ ⁵⁄₁₀₀ ₓ ₂) = 105
Amount = Rs (420 + 105) = 525
```

Q 17 - what will be the ratio of simple interest earned by certain amount at the same rate of interest for 6 years and that for 9 years?

A - 2:3

B - 1:4

C - 1:3

D - none

Answer - A

Explanation

```
Let the principal be P and rate of interest be R%
therefore Required Ratio =(ᴾˣᴿˣ⁶⁄₁₀₀⁄ᴾˣᴿˣ⁹⁄₁₀₀)
⁶ᴾᴿ⁄₉ᴾᴿ
=2:3
```

Q 18 - Nitin borrowed some money at 6% for the first three years, 9% for the next 5 years and 13% for the period beyond 8 years. If the total interest paid by him at the end of eleven years is Rs 8160, how much money did he borrow?

A - 8000

B - 10000

C - 12000

D - Data inadequate

Answer - A

Explanation

```
Let the sum be Z. Then,
(Zx6x3/100) + (Zx9x5/100) + (Zx13x3/100) = 8160
= 18Z + 45Z + 39Z = (8160 x 100)
102Z = 816000
Z = 8000
```

Q 19 - An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is changing an interest of 10%, the effective rate of interest becomes?

A - 12

B - 15

C - 10

D - 10.25

Answer - D

Explanation

```
Let the sum be Rs. 100. Then,
S.I. for first 6 months = Rs. (100 x 10 x 1/100 x 2) = Rs 5.
S.I. for last 6 months = Rs. (105 x 10 x 1/100 x 2) = Rs 5.25
So, amount at the end of 1 year = Rs. (100 + 5 + 5.25) = Rs. 110.25
Therefore Effective rate = (110.25 - 100) = 10.25%
```

Q 20 - A sum of money at simple interest amounts to RS. 815 in 3 years and to 854 in 4 years. The sum is?

A - 700

B - 690

C - 698

D - 650

Answer - C

Explanation

```
S.I. for 1 year = Rs. (854 - 815) = 39
S.I. for 3 years = Rs. (39 x 3) = 117
Therefore Principal = 815 - 117 = 698
```

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