

# SIMPLIFICATION - SOLVED EXAMPLES

## Advertisements

**Q 1 -  $2 - [3 - \{6 - (5 - 4 - 3)\}] = ?$**

A - 0

B - 1

C - 2

D - 3

**Answer - B**

**Explanation**

$$\begin{aligned} \text{Given exp.} &= 2 - [3 - \{6 - (5 - 4 + 3)\}] && \text{[ Removing viranaculam]} \\ &= 2 - [3 - \{6 - (5 - 4 + 3)\}] && \text{[ Removing ( )]} \\ &= 2 - [3 - \{6 - 4\}] && \text{[ Removing \{\}] } \\ &= 2 - [3 - 2] && \text{[ Removing [ ]]} \\ &= 2 - 1 = 1 \end{aligned}$$

**Q 2 -  $(4.8 * 1.8 / 3.6 + 5.4 \text{ of } 1/9 - 1/5) = ?$**

A - 2.8

B - 3.8

C - 4.8

D - 5.8

**Answer - A**

**Explanation**

$$\begin{aligned} \text{Given exp .} &= 4.8 * 1.8 / 3.6 + 0.6 - 1/5 \text{ (Removing of ( ) )} \\ &= 4.8 * 1.8 * 1 / 3.6 + 0.6 - 1/5 \text{ ( Removing /)} \\ &= 2.4 + 0.6 - 0.2 \text{ (Removing *)} \\ &= 3 - 0.2 = 2.8 \end{aligned}$$

**Q 3 -  $\frac{(598 + 479)^2 - (598 - 479)^2}{(598 * 479)} = ?$**

A - 4

B - 5

C - 6

D - 7

**Answer - A**

**Explanation**

$$\text{Given exp. } \frac{(a+b)^2 - (a-b)^2}{ab}, \text{ where } a = 598, b = 479$$

$$= 4ab / ab = 4$$

$$Q 4 - ((736+ 278)^2 + (736- 278)^2)/(736 *736 + 278 *278) = ?$$

A - 1

B - 2

C - 3

D - 4

**Answer - B**

**Explanation**

$$\begin{aligned} \text{Given exp.} &= (a+b)^2 + (a-b)^2, \text{ Where } a= 736, b= 278 \\ &(a^2 + b^2) \\ &= 2(a^2+b^2) / (a^2+b^2) = 2 \end{aligned}$$

$$Q 5 - (47*47*47+35*35*35+ 26*26*26 -47*35*78)/(47*47+35*35+26*26- 47*35- 35*26-47*26) = ?$$

A - 92

B - 100

C - 108

D - 116

**Answer - C**

**Explanation**

$$\begin{aligned} \text{Given Exp.} &a^3+b^3+c^3-3abc, \text{ where } a =47, b= 35, c= 26 \\ &a^2+ b^2+c^2- ab-bc -ca \\ &= (a+b+c) = (47+35+26) = 108 \end{aligned}$$

$$Q 6 - [(a-b)^3 + (b-c)^3 + (c-a)^3]/[6(a-b) (b-C) (c-a)] = ?$$

A - 1/2

B - 1/3

C - 1/4

D - 1/5

**Answer - A**

**Explanation**

$$\begin{aligned} \text{Putting } (a-b) &=x, (b-c) =y \text{ and } (c-a) = z, \text{ then we find } x+y+z = 0 \\ \therefore x^3 + y^3 + z^3 &= 3xyz \\ \therefore x^3 + y^3 + z^3 / 6xyz & \\ = 3xyz/6xyz &= 1/2 \end{aligned}$$

$$Q 7 - \text{If } a+b+c = 13, a^2 + b^2 + c^2 = 69, \text{ then } (ab+bc+ca) = ?$$

A - 20

B - 30

C - 40

D - 50

**Answer - D**

**Explanation**

$$\begin{aligned} \text{We have } (a+b+c)^2 &= (a^2+b^2+c^2) + 2(ab+bc+ca) \\ \Rightarrow (13)^2 &= 69 + 2(ab+bc+ca) \\ \Rightarrow 2(ab+bc+ca) &= (169-69) = 100 \Rightarrow (ab+bc+ca) = 50 \end{aligned}$$

**Q 8 - We have  $a/b = 2/3$ , then what would be the value the  $3a+5b/ 3a-5b = ?$**

A -  $1/3$

B -  $2/3$

C -  $4/3$

D -  $-4/3$

**Answer - D**

**Explanation**

$$\begin{aligned} \text{Given exp. } \frac{3a+5b}{3a-5b} &= \frac{3(a/b)+5}{3(a/b)-5} \\ &= \frac{(3*2/3+5)}{(3*2/3-5)} = \frac{2+5}{2-5} = \frac{7}{-3} = -4/3 \end{aligned}$$

**Q 9 - What should be the value of a,b,c if the we have positive integers of a, b and c such that the value of  $a^2+b^2=45$  and  $b^2+c^2 = 40$ .**

A - 1,2,3

B - 3,6,2

C - 2,6,4

D - 1,6,2

**Answer - B**

**Explanation**

$$\begin{aligned} a^2+b^2 &= 45 \text{ and } b^2+c^2 = 40 \\ \text{On subtracting ,we get } a^2-c^2 &= 5 \Rightarrow (a+c) (a-c) = 5 \\ \Rightarrow a+c &= 5 \text{ and } a-c = 1 \Rightarrow a = 3, c = 2 \\ 9+ b^2 &= 45 \Rightarrow b^2 = 36 \Rightarrow b = 6 \\ \therefore a &= 3, b = 6 \text{ and } c = 2 \end{aligned}$$

**Q 10 -  $(1-1/3) (1-1/4) (1-1/5) \dots (1-1/99)(1-1/100) = ?$**

A -  $1/40$

B -  $1/50$

C -  $1/60$

D - 1/70

**Answer - B**

**Explanation**

Given exp.  $2/3 * 3/4 * 4/5 * \dots * 98/99 * 99/100 = 2/100 = 1/50$

**Q 11 -  $(1 - 1/2)(1 - 1/3)(1 - 1/4) \dots (1 - 1/n-1)(1 - 1/n) = ?$**

A - 1/n

B - 1/2n

C - 1/3n

D - 1/4n

**Answer - A**

**Explanation**

Given exp. =  $(1 - 1/2)(1 - 1/3)(1 - 1/4) \dots (n-2)/(n-1) * (n-1)/n = 1/n$

**Q 12 -  $1/5 + 999 * 494/495 * 99 = ?$**

A - 999000

B - 99000

C - 9000

D - 900

**Answer - A**

**Explanation**

Given exp. =  $1/5 + (999 + 494/495) * 99$   
=  $1/5 + 999 * 99 + 494/495 * 99$   
=  $1/5 + (1000 - 1) * 99 + 494/5$   
=  $999000 - 99 + 495/5 = 99000 - 99 + 99 = 999000.$

**Q 13 - If  $x + 1/\{1 + 1/(3 + 1/4)\} = 2$ , then  $x = ?$**

A - 1/17

B - 21/17

C - 20/17

D - 19/17

**Answer - B**

**Explanation**

$x + 1/\{1 + 1/(3 + 1/4)\} = 2 \Rightarrow x + 1/\{1 + 1/(13/4)\} = 2 \Rightarrow x + 1/(1 + 4/13) = 2$   
=  $x + 1/(17/13) = 2 \Rightarrow x + 17/13 = 2 \Rightarrow x = (2 - 13/17)$   
=  $x = 34 - 13/17 = 21/17$

**Q 14 -  $1 / (1 + (2/3)/(1+ 2/3 + (8/9)/(1- 2/3)))$**

A - 13/15

B - 12/15

C - 11/15

D - 7/15

**Answer - A**

**Explanation**

$$\begin{aligned} & 1 / (1 + (2/3)/(1+ 2/3 + (8/9)/(1- 2/3))) \\ &= 1 / (1 + (2/3)/(1+ 2/3 + (8/9)/(1/3))) \\ &= 1 / (1 + (2/3)/(1+ 2/3 + (8/9)/3/1)) \\ &= 1 / (1 + (2/3)/(1+ 2/3 + 8/3)) \\ &= 1 / (1 + (2/3)/(13/3)) \\ &= 1 / (1 + 2/3 * 3/13) \\ &= 1 / (1 + 2/13) \\ &= 1 / (15/13) \\ &= 13/15 \end{aligned}$$

**Q 15 - Find the value of 3/7 of the estate if the value of 4/5 of this estate is 16800.**

A - Rs. 9000

B - Rs. 10000

C - Rs. 8000

D - Rs. 7000

**Answer - A**

**Explanation**

If we assume x Rs. is the estate value. Then,  
 $4/5 * x = 16800 \Rightarrow x = (16800 * 5/4) = 21000$   
 $\therefore 3/7$  of the estate = Rs.  $(3/7 * 21000) =$  Rs. 9000.

**Q 16 - What is the number if 3/7 of 2/5 of a number is 198.**

A - 1255

B - 1155

C - 1055

D - 955

**Answer - B**

**Explanation**

If the number be x then,  
 $3/7$  of  $2/5$  of x = 198  
 $\Rightarrow 6x/35 = 198$   
 $\Rightarrow x = (198 * 35/6) = (33 * 35) = 1155.$

**Q 17 - Divide the amount 312 in such a way that 100 boys gets Rs. 3.60 each and each girl gets Rs. 2.40. How many girls are there?**

- A - 40
- B - 30
- C - 25
- D - 20

**Answer - A**

**Explanation**

If  $x$  is the quantity of girls then, the quantity of boys =  $(100-x)$   
 $\therefore 2.40 *x + 3.60 *(100-x) = 312$   
 $\Rightarrow 240/100 *x + \{360*(100-x)/100\} = 312$   
 $\Rightarrow 240x + 36000 - 360 x = 31200$   
 $\Rightarrow 120x = (36000- 31200 ) = 4800 \Rightarrow x = 4800/120 = 40$   
 $\Rightarrow$  quantity of girls = 40.

**Q 18 - A boy wants to multiply a number by 25 but by mistake he multiplied it by 52 and he got the result which was 324 more in the comparisons of correct answer. Find the number?**

- A - 12
- B - 13
- C - 14
- D - 15

**Answer - A**

**Explanation**

Let the number be  $x$ . then ,  
 $52x-25x = 324 \Rightarrow 27x = 324 \Rightarrow x = 12$   
 $\therefore$  Required number = 12

**Q 19 - A cab start from his center with full capacity. Cab stops on stoppage A where  $1/3$  of the passanger shift down the cab and new 30 passanger entered in cab, in the next attempt cab stop on C Stoppage where  $1/4$  of the passangers shift down the cab and 12 new passanger entered in the cab and last stoppage which was C all the 84 passangers shifted down. Find how much passangers can board at a time?**

- A - 98
- B - 99
- C - 100
- D - 101

**Answer - B**

**Explanation**

If  $x$  passanger can board / sit in a cab at the same time.  
Number of passanger between the stations from A to B =  $(x-x/3 +30) = (2x/3+ 30)$   
Number of passanger between the stations from B to C =  $(2x/3+30)- 1/4$

$$(2x/3+30)+12$$

$$= 3/4 (2x/30)+12 = x/2 +45/2+12$$

$$\therefore x/2+ 45/2+12= 84 \Rightarrow x+ 45+24 = 168 \Rightarrow x = (168-69)= 99$$

So, we can say 99 passengers can board at a time.

**Q 20 - Total cost of a TV and VCR is Rs. 35000 . If the cost of tv is 3/2 times more in the comparisons of VCR. In that case what should be the value of VCR?**

A - 14000 Rs

B - 15000 Rs

C - 16000 Rs

D - 17000 Rs

**Answer - A**

**Explanation**

If x is the value of VCR then, the cost of the TV is =  $3x/2$

$$x+ 3x/2 = 35000 \Rightarrow 5x = 70000 \Rightarrow x = 14000$$