

Huawei Test 4

1

A train 240 m long passes a pole in 24 seconds. How long will it take to pass a platform 650 m long?

- A. 65 sec
 B. 89 sec
 C. 100 sec
 D. 150 sec

Explanation:

$$\text{Speed} = 240/24 \text{ m/sec} = 10 \text{ m/sec}$$

$$\text{Required time} = [(240 + 650)/10] \text{sec} = 89 \text{ sec}$$

2

Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr. The faster train passes the slower train in 36 seconds. The length of each train is:

- A. 50 m
 B. 72 m
 C. 80 m
 D. 82 m

Explanation:

Let the length of each train be x metres.

Then, distance covered = $2x$ metres.

$$\text{Relative speed} = (46 - 36) \text{ km/hr}$$

$$= [10 \times 5/18] \text{ m/sec}$$

$$= 25/9 \text{ m/sec}$$

$$2x/36 = 25/9$$

$$\Rightarrow 2x = 100$$

$$\Rightarrow X = 50$$

3

A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?

- () A. Rs. 375
 () B. Rs. 400
 () C. Rs. 600
 () D. Rs. 800

$$C's\ 1\ day's\ work = \frac{1}{3} - \left(\frac{1}{6} + \frac{1}{8} \right) = \frac{1}{3} - \frac{7}{24} = \frac{1}{24}$$

$$A's\ wages : B's\ wages : C's\ wages = \frac{1}{6} : \frac{1}{8} : \frac{1}{24} = 4 : 3 : 1.$$

$$\therefore C's\ share\ (for\ 3\ days) = Rs. \left(3 \times \frac{1}{24} \times 3200 \right) = Rs. 400.$$

Explanation:

4

10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?

- () A. 3
 () B. 5
 () C. 7
 () D. Cannot be determined

Explanation:

1 woman's 1 day's work = $1/70$

1 child's 1 day's work = $1/140$

(5 women + 10 children)'s day's work = $5/70 + 10/140 = 1/14 + 1/14 = 1/7$

5 women and 10 children will complete the work in 7 days.

5

The percentage profit earned by selling an article for Rs. 1920 is equal to the percentage loss incurred by selling the same article for Rs. 1280. At what price should the article be sold to make 25% profit?

- A. Rs. 2000
 B. Rs. 2200
 C. Rs. 2400
 D. Data inadequate

Explanation:

Let C.P. be Rs. x .

Then, $[(1920-x)/x] * 100 = [(x-1280)/x] * 100$

$\Rightarrow 1920-x = x-1280$

$\Rightarrow 2x = 3200$

$\Rightarrow x = 1600$

Required S.P. = 125% of Rs. 1600 = Rs. $[125/100 * 1600]$ = Rs 2000

6

A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?

- A. Rs. 18.20
 B. Rs. 70
 C. Rs. 72
 D. Rs. 88.25

Explanation:

C.P. = Rs. $[100/122.5 * 392]$ = Rs $[1000/1225 * 392]$ = Rs 320

Profit = Rs $[392-320]$ = Rs 72

7

A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is:

- A. 14 years
- B. 18 years
- C. 20 years
- D. 22 years

Explanation:

Let the son's present age be x years. Then, man's present age = $(x + 24)$ years.

$$= (x + 24) + 2 = 2(x + 2)$$

$$\Rightarrow x + 26 = 2x + 4$$

$$\Rightarrow x = 22.$$

8

Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present?

- A. 16 years
- B. 18 years
- C. 20 years
- D. Cannot be determined

Explanation:

Let the ages of Kunal and Sagar 6 years ago be $6x$ and $5x$ years respectively.

$$\text{Then, } \frac{(6x + 6) + 4}{[(5x + 6) + 4]} = \frac{11}{10}$$

$$\Rightarrow 10(6x + 10) = 11(5x + 10)$$

$$\Rightarrow 5x = 10$$

$$\Rightarrow x = 2.$$

Sagar's present age = $(5x + 6) = 16$ years.

9

The captain of a cricket team of 11 members is 26 years old and the wicket keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining players is one year less than the average age of the whole team. What is the average age of the team?

- A. 23 years
 B. 24 years
 C. 25 years
 D. None of these

Explanation: Let the average age of the whole team by x years.

$$11x - (26 + 29) = 9(x - 1)$$

$$\Rightarrow 11x - 9x = 46$$

$$\Rightarrow 2x = 46$$

$$\Rightarrow x = 23.$$

So, average age of the team is 23 years.

10

The average monthly income of P and Q is Rs. 5050. The average monthly income of Q and R is Rs. 6250 and the average monthly income of P and R is Rs. 5200. The monthly income of P is:

- A. 3500
 B. 4000
 C. 4050
 D. 5000

Explanation:

Let P, Q and R represent their respective monthly incomes. Then, we have:

$$P + Q = (5050 \times 2) = 10100 \dots (i)$$

$$Q + R = (6250 \times 2) = 12500 \dots (ii)$$

$$P + R = (5200 \times 2) = 10400 \dots (iii)$$

Adding (i), (ii) and (iii), we get: $2(P + Q + R) = 33000$ or $P + Q + R = 16500 \dots (iv)$

Subtracting (ii) from (iv), we get $P = 4000$.

P's monthly income = Rs. 4000.

11

The H.C.F. of two numbers is 11 and their L.C.M. is 7700. If one of the numbers is 275, then the other is:

- () A. 279
- () B. 283
- () C. 308
- () D. 318

Explanation:

$$\text{Other number} = \frac{11 \times 7700}{275} = 308$$

12

What will be the least number which when doubled will be exactly divisible by 12, 18, 21 and 30 ?

- () A. 196
- () B. 630
- () C. 1260
- () D. 2520

Explanation:

L.C.M. of 12, 18, 21, 30	2 12 - 18 - 21 - 30
= 2 x 3 x 2 x 3 x 7 x 5 = 1260.	3 6 - 9 - 21 - 15
Required number = (1260 ÷ 2)	2 - 3 - 7 - 5
= 630.	

13

If $a = 0.1039$, then the value of $4a^2 - 4a + 1 + 3a$ is:

- () A. 0.1039
- () B. 0.2078
- () C. 1.1039
- () D. 2.1039

Explanation:

$$\begin{aligned}
 4a^2 - 4a + 1 + 3a &= (1)^2 + (2a)^2 - 2 \times 1 \times 2a + 3a \\
 &= (1 - 2a)^2 + 3a \\
 &= (1 - 2a) + 3a \\
 &= (1 + a) \\
 &= (1 + 0.1039) \\
 &= 1.1039
 \end{aligned}$$

14

If $x = \frac{3+1}{3-1}$ and $y = \frac{3-1}{3+1}$ then the value of $(x^2 + y^2)$ is:

- A. 10
 B. 13
 C. 14
 D. 15

$$x = \frac{3+1}{3-1} \times \frac{(3+1)}{(3+1)} = \frac{(3+1)^2}{(3-1)} = \frac{3+1-23}{2} = 2+3.$$

$$y = \frac{(3-1)}{(3+1)} \times \frac{(3-1)}{(3-1)} = \frac{(3-1)^2}{(3-1)} = \frac{3+1-23}{2} = 2-3.$$

$$\therefore x^2 + y^2 = (2+3)^2 + (2-3)^2$$

$$= 2(4+3)$$

$$= 14$$

Explanation:

15

A man completes $\frac{5}{8}$ of a job in 10 days. At this rate, how many more days will it takes him to finish the job?

- A. 5
 B. 6
 C. 7
 D. $7 \times \frac{1}{2}$

Explanation:

Work done $= \frac{5}{8}$

Balance work $= [1 - (\frac{5}{8})] = \frac{3}{8}$

Let the required number of days be x.

Then, $\frac{5}{8} : \frac{3}{8} = :: 10 : x$ $\frac{5}{8} \times x = \frac{3}{8} \times 10$

$\Rightarrow [(\frac{3}{8}) \times 10 \times (\frac{8}{5})]$

$\Rightarrow X=6$

16

If a quarter kg of potato costs 60 paise, how many paise will 200 gm cost?

- A. 48 paise
 B. 54 paise
 C. 56 paise
 D. 72 paise

Explanation:

Let the required weight be x kg.

Less weight, Less cost (Direct Proportion)

$$250 : 200 :: 60 : x \Rightarrow 250 \times x = (200 \times 60)$$

$$\Rightarrow x = (200 \times 60) / 250$$

$$\Rightarrow x = 48$$

17

The banker's discount of a certain sum of money is Rs. 72 and the true discount on the same sum for the same time is Rs. 60. The sum due is:

- A. Rs. 360
 B. Rs. 432
 C. Rs. 540
 D. Rs. 1080

Explanation:

$$\text{Sum} = (B.D \times T.D) / (B.D - T.D) = \text{RS } (72 \times 60) / (72 - 60) = \text{Rs. } 360$$

18

The certain worth of a certain sum due sometime hence is Rs. 1600 and the true discount is Rs. 160. The banker's gain is:

- A. Rs. 20
 B. Rs. 24
 C. Rs. 16
 D. Rs. 12

Explanation:

$$B.G. = (T.D.)^2 / P.W = \text{Rs. } [160 \times 160] / 1600 = \text{Rs. } 16$$

19

The diagonal of the floor of a rectangular closet is $7\frac{1}{2}$ feet. The shorter side of the closet is $4\frac{1}{2}$ feet. What is the area of the closet in square feet?

- A. $5\frac{1}{4}$
 B. $13\frac{1}{2}$
 C. 27
 D. 37

Explanation:

$$\text{Other side} = (15/2)^2 - (9/2)^2$$

$$= 225/4 - 81/4$$

$$= 144/4$$

$$\text{Area of closet} = (6 \times 4.5) \text{ sq. ft} = 27 \text{ sq. ft.}$$

20

A towel, when bleached, was found to have lost 20% of its length and 10% of its breadth. The percentage of decrease in area is:

- A. 10%
 B. 10.08%
 C. 20%
 D. 28%

Explanation:

Let original length = x and original breadth = y.

$$\text{Decrease in area} = xy - [(80/100)x \times (90/100)y]$$

$$= xy - [(18/25)xy]$$

$$= 7/25 xy$$

$$\text{Decrease \%} = [(7/25)xy \times (1/xy) \times 100]\% = 28\%$$

21

What will be the output of the program?

```
#include<stdio.h>

int main()
{
float f=43.20;

printf("%e, ", f);

printf("%f, ", f);

printf("%g", f);

return 0;

}
```

- A. 4.320000e+01, 43.200001, 43.2
- B. 4.3, 43.22, 43.21
- C. 4.3e, 43.20f, 43.00
- D. Error

Explanation:

printf("%e, ", f); Here '%e' specifies the "Scientific Notation" format. So, it prints the 43.20 as 4.320000e+01.

printf("%f, ", f); Here '%f' specifies the "Decimal Floating Point" format. So, it prints the 43.20 as 43.200001.

printf("%g, ", f); Here '%g' "Use the shorter of %e or %f". So, it prints the 43.20 as 43.2.

22

What will be the output of the program?

```
#include<stdio.h>
#include<math.h>
int main()
{
float n=1.54;
printf("%f, %f\n", ceil(n), floor(n));
return 0;
}
```

- A. 2.000000, 1.000000
- B. 1.500000, 1.500000
- C. 1.550000, 2.000000
- D. 1.000000, 2.000000

Explanation:

ceil(x) round up the given value. It finds the smallest integer not < x.

floor(x) round down the given value. It finds the smallest integer not > x.

printf("%f, %f\n", ceil(n), floor(n)); In this line ceil(1.54) round up the 1.54 to 2 and floor(1.54) round down the 1.54 to 1.

In the printf("%f, %f\n", ceil(n), floor(n)); statement, the format specifier "%f %f" tells output to be float value. Hence it prints 2.000000 and 1.000000.

23

What will be the output of the program?

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
float d=2.25;
```

```
printf("%e,", d);
```

```
printf("%f,", d);
```

```
printf("%g,", d);
```

```
printf("%lf", d);
```

```
return 0;
```

```
}
```

- A. 2.2, 2.50, 2.50, 2.5
- B. 2.2e, 2.25f, 2.00, 2.25
- C. 2.250000e+000, 2.250000, 2.25, 2.250000
- D. Error

Explanation:

printf("%e,", d); Here '%e' specifies the "Scientific Notation" format. So, it prints the 2.25 as 2.250000e+000.

printf("%f,", d); Here '%f' specifies the "Decimal Floating Point" format. So, it prints the 2.25 as 2.250000.

printf("%g,", d); Here '%g' "Use the shorter of %e or %f". So, it prints the 2.25 as 2.25.

printf("%lf,", d); Here '%lf' specifies the "Long Double" format. So, it prints the 2.25 as 2.250000.

24

Point out the error in the program

```
#include<stdio.h>

#define SI(p, n, r) float si; si=p*n*r/100;

int main()
{
float p=2500, r=3.5;

int n=3;

SI(p, n, r);

SI(1500, 2, 2.5);

return 0;
}
```

- A. 26250.00 7500.00
- B. Nothing will print
- C. Error: Multiple declaration of si
- D. Garbage values

Explanation:

The macro #define SI(p, n, r) float si; si=p*n*r/100; contains the error. To remove this error, we have to modify this macro to

```
#define SI(p,n,r) p*n*r/100
```

25

Point out the error in the program

```
#include<stdio.h>

int main()
{
int i;

#if A

printf("Enter any number:");

scanf("%d", &i);

#elif B

printf("The number is odd");

return 0;
}
```

- A. Error: unexpected end of file because there is no matching #endif
- B. The number is odd
- C. Garbage values
- D. None of above

Explanation:

The conditional macro #if must have an #endif. In this program there is no #endif statement written.

26

What will be the output of the program?

```
#include<stdio.h>
int main()
{
float a=0.7;
if(a < 0.7f)
printf("C\n");
else
printf("C++\n");
return 0;
}
```

- A. C
- B. C++
- C. Compiler error
- D. Non of above

Explanation:

if(a < 0.7f) here a is a float variable and 0.7f is a float constant. The float variable a is not less than 0.7f float constant. But both are equal. Hence the ifcondition is failed and it goes to else it prints 'C++'

27

What will be the output of the program ?

```
#include<stdio.h>
```

```
#include<string.h>
```

```
int main()
```

```
{
```

```
char str1[20] = "Hello", str2[20] = " World";
```

```
printf("%s\n", strcpy(str2, strcat(str1, str2)));
```

```
return 0;
```

```
}
```

- A. Hello
- B. World
- C. Hello World
- D. WorldHello

Explanation:

Step 1: char str1[20] = "Hello", str2[20] = " World"; The variable str1 and str2 is declared as an array of characters and initialized with value "Hello" and " World" respectively.

Step 2: printf("%s\n", strcpy(str2, strcat(str1, str2)));

=> strcat(str1, str2) it append the string str2 to str1. The result will be stored in str1.

Therefore str1 contains "Hello World".

=> strcpy(str2, "Hello World") it copies the "Hello World" to the variable str2.

Hence it prints "Hello World".

28

What will be the output of the program ?

```
#include<stdio.h>

int main()
{
char p[] = "%d\n";

p[1] = 'c';

printf(p, 65);

return 0;

}
```

- A. A
- B. a
- C. c
- D. 65

Explanation:

Step 1: char p[] = "%d\n"; The variable p is declared as an array of characters and initialized with string "%d".

Step 2: p[1] = 'c'; Here, we overwrite the second element of array p by 'c'. So array p becomes "%c".

Step 3: printf(p, 65); becomes printf("%c", 65);

Therefore it prints the ASCII value of 65. The output is 'A'.

29

If the size of an integer is 4 bytes, What will be the output of the program ?

```
#include<stdio.h>
#include<string.h>
int main()
{
printf("%d\n", strlen("123456"));
return 0;
}
```

- A. 6
- B. 12
- C. 7
- D. 2

Explanation:

The function strlen returns the number of characters in the given string.

Therefore, strlen("123456") contains 6 characters.

The output of the program is "6".

30

What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
int arr[5], i=0;
```

```
while(i<5)
```

```
arr[i]=++i;
```

```
for(i=0; i<5; i++)
```

```
printf("%d, ", arr[i]);
```

```
return 0;
```

```
}
```

- A. 1, 2, 3, 4, 5,
- B. Garbage value, 1, 2, 3, 4,
- C. 0, 1, 2, 3, 4,
- D. 2, 3, 4, 5, 6,

Explanation:

Since C is a compiler dependent language, it may give different outputs at different platforms. We have given the TurboC Compiler (Windows) output.

Please try the above programs in Windows (Turbo-C Compiler) and Linux (GCC Compiler), you will understand the difference better.

31

Point out the error, if any in the program.

```
#include<stdio.h>
int main()
{
int a = 10, b;
a >=5 ? b=100: b=200;
printf("%d\n", b);
return 0;
}
```

- A. 100
- B. 200
- C. Error: L value required for b
- D. Garbage value

Explanation: variable b is not assigned

32

What will be the output of the program ?

```
#include<stdio.h>

int main()

{

int arr[1]={10};

printf("%d\n", 0[arr]);

return 0;

}
```

- A. 1
- B. 10
- C. 0
- D. 6

Explanation:

Step 1: int arr[1]={10}; The variable arr[1] is declared as an integer array with size '2' and it's first element is initialized to value '10'(means arr[0]=10)

Step 2: printf("%d\n", 0[arr]); It prints the first element value of the variable arr.

Hence the output of the program is 10.

33

Point out the error in the program?

```
typedef struct data mystruct;  
struct data  
{  
int x;  
mystruct *b;  
};
```

- A. Error: in structure declaration
- B. Linker Error
- C. No Error
- D. None of above

Explanation:

Here the type name mystruct is known at the point of declaring the structure, as it is already defined

34

Point out the error in the program?

```
#include<stdio.h>  
int main()  
{  
struct emp  
{  
char name[20];  
float sal;  
};  
struct emp e[10];  
int i;  
for(i=0; i<=9; i++)  
scanf("%s %f", e[i].name, &e[i].sal);  
return 0;  
}
```

- A. Error: invalid structure member
- B. Error: Floating point formats not linked

- C. No error
- D. None of above

Explanation:

At run time it will show an error then program will be terminated.

Sample output: Turbo C (Windwos)

```
c:\>myprogram
```

Sample

```
12.123
```

```
scanf : floating point formats not linked
```

```
Abnormal program termination
```

35

Point out the error in the program?

```
struct emp
```

```
{  
int ecode;
```

```
struct emp *e;  
};
```

- A. Error: in structure declaration
- B. Linker Error
- C. No Error
- D. None of above

Explanation:

This type of declaration is called as self-referential structure. Here *e is pointer to astruct emp.

36

Point out the error in the program?

```
typedef struct data mystruct;  
  
struct data  
{  
  
int x;  
  
mystruct *b;  
  
};
```

- A. Error: in structure declaration
- B. Linker Error
- C. No Error
- D. None of above

Explanation:

Here the type name mystruct is known at the point of declaring the structure, as it is already defined.

37

Point out the error in the program?

```
#include<stdio.h>  
  
int main()  
{  
  
struct a  
{  
  
category:5;  
  
scheme:4;  
};  
  
printf("size=%d", sizeof(struct a));  
  
return 0;  
  
}
```

- A. Error: invalid structure member in printf
- B. Error: bit field type must be signed int or unsigned int
- C. No error
- D. None of above

38

Which of the following statements are correct about the program?

```
#include<stdio.h>
int main()
{
int x = 30, y = 40;
if(x == y)
printf("x is equal to y\n");
```

```
else if(x > y)
printf("x is greater than y\n");
```

```
else if(x < y)
printf("x is less than y\n")
return 0;
```

- A. Error: Statement missing
- B. Error: Expression syntax
- C. Error: Lvalue required
- D. Error: Rvalue required

Explanation: This program will result in error "Statement missing ;" printf("x is less than y\n") here ; is added to the end of this statement.

39

Point out the error in the program?

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
struct emp
```

```
{
```

```
char name[20];
```

```
float sal;
```

```
};
```

```
struct emp e[10];
```

```
int i;  
for(i=0; i<=9; i++)  
scanf("%s %f", e[i].name, &e[i].sal);  
return 0;  
}
```

- A. Error: invalid structure member
- B. Error: Floating point formats not linked
- C. No error
- D. None of above

Explanation: At run time it will show an error then program will be terminated.

Sample output: Turbo C (Windwos)

```
c:\>myprogram
```

Sample

```
12.123
```

```
scanf : floating point formats not linked
```

Abnormal program termination

40

What will be the output of the program ?

```
#include<stdio.h>
```

```
void fun(int **p);
```

```
int main()
```

```
{
```

```
int a[3][4] = {1, 2, 3, 4, 4, 3, 2, 8, 7, 8, 9, 0};
```

```
int *ptr;
```

```
ptr = &a[0][0];
```

```
fun(&ptr);  
return 0;  
}  
void fun(int **p)  
{  
printf("%d\n", **p);  
}
```

- A. 1
- B. 2
- C. 3
- D. 4

Explanation: Step 1: `int a[3][4] = {1, 2, 3, 4, 4, 3, 2, 8, 7, 8, 9, 0}`; The variable `a` is declared as an multidimensional integer array with size of 3 rows 4 columns.

Step 2: `int *ptr`; The `*ptr` is a integer pointer variable.

Step 3: `ptr = &a[0][0]`; Here we are assigning the base address of the array ato the pointer variable `*ptr`.

Step 4: `fun(&ptr)`; Now, the `&ptr` contains the base address of array `a`.

Step 4: Inside the function `fun(&ptr)`; The `printf("%d\n", **p)`; prints the value '1'.

because the `*p` contains the base address or the first element memory address of the array `a` (ie. `a[0]`)

`**p` contains the value of `*p` memory location (ie. `a[0]=1`).

Hence the output of the program is '1'