## HARSHIT VERMA | 18114029

1>Write a JAVA program to find the multiplication of given 4 numbers. Also find their geometric mean.

1. **import** java.lang.Math;
2. **import** java.util.\*;
3. **import** java.lang.\*;
4. **import** java.io.\*;
6. */\* Name of the class has to be "Main" only if the class is public. \*/*
7. **class** Ideone
8. {
9. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
10. {
11. **int** a=1,b=2,c=3,d=4;
12. **int** e=a\*b\*c\*d;
13. **double** gm= [Math](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+math).pow(e,0.25);
14. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(gm);
16. }
17. }

Stdout-2.2133638394006434

2>Write a JAVA program which reads the value of the height and radius of the base of a cylinder and calculates the Volume of that cylinder.

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. Scanner sc=**new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("enter height");
12. **double** h=sc.nextDouble();
13. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("enter Radius");
14. **double** r=sc.nextDouble();
15. **double** V=3.14\*r\*r\*h;
16. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("volume of cylinder ="+V);
18. }
19. }

 stdin

2 22

 stdout

 volume of cylinder =3039.52

3>Given as input a floating (real) number of centimeters, print out the equivalent number of feet (integer) and inches (floating, 1 decimal), with the inches given to an accuracy of one decimal place. Assume 2.54 centimeters per inch, and 12 inches per foot. If the input value is 333.3, the output format should be: 333.3 centimeters is 10 feet 11.2 inches.

1. 3>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
4. **import** java.lang.Math;
6. */\* Name of the class has to be "Main" only if the class is public. \*/*
7. **class** Ideone
8. {
9. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
10. {
11. Scanner sc=**new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
13. **double** a=sc.nextDouble();
14. **int** f;**double** i,o;
15. i=a/2.54;
16. f=(**int**)i/12;
17. o=i-f\*12;
18. o=[Math](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+math).floor(o\*10);
19. o=o/10;

22. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(f+" feet"+" "+o +" inches");

25. }

 stdin

 333.33

 stdout

10 feet 11.2 inches

4>Given as input an integer number of seconds, print as output the equivalent time in hours, minutes and seconds. Recommended output format is something like 7322 seconds is equivalent to 2 hours 2 minutes 2 seconds.

1. 4>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {**int** h,m,S;
11. Scanner sc=**new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
12. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("enter secs");
13. **int** s=sc.nextInt();
14. h=s/3600;
15. m=(s-h\*3600)/60;
16. S=(s-h\*3600)-m\*60;
17. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(h+" "+m+" "+S);
18. }
20. }

 stdin

8000

 stdout

2 13 20

5>Write a JAVA program to multiply two numbers without using \* operator.

1. 5>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
4. **class** Ideone
5. {
6. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
7. {
8. **float** a=5,b=(**float**)1/6;
9. **float** m=a/b;
10. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(m);
11. }
12. }

 stdout

 30.0

6>Write a JAVA program to find the roots of the quadratic equation and display a message that roots are equal or distinct or real or complex

1. 6>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {**double** r1,r2,r;
10. Scanner sc= **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. **int** a=sc.nextInt();
12. **int** b=sc.nextInt();
13. **int** c=sc.nextInt();
14. **double** D= b\*b-4\*a\*c;
15. **if**(D>0)
16. {
17. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("roots are real and distinct **\n** roots are:-");
18. r1=(-b+[Math](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+math).pow(D,0.5))/(2\*a);
19. r2=(-b-[Math](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+math).pow(D,0.5))/(2\*a);
20. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(r1+" "+r2);
21. }
22. **else** **if**(D==0)
23. {[System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("roots are same **\n** root is:-");
24. r=-b/(2\*a);
25. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(r);
27. }
29. **else**
30. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("roots are imaginary");





37. }
38. }

 stdin

1 2 -3

 stdout

 roots are real and distinct

roots are:-

1.0 -3.0

7>Write a JAVA program to find whether given integer n is a power of 2 or not. Also write a separate/same program to generate a first 50 power of 2 numbers.

a>

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. Scanner sc =**new** Scanner ([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. **int** n=sc.nextInt();
12. **if**((n & n-1) ==0)
13. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("number is power of two");
14. **else**
15. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("number is not power of two");
16. }
17. }

 stdin

16

 stdout

number is power of two

1. b>**import** java.lang.Math;
2. **import** java.util.\*;
3. **import** java.lang.\*;
4. **import** java.io.\*;
6. */\* Name of the class has to be "Main" only if the class is public. \*/*
7. **class** Ideone
8. {
9. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
10. {
11. **for**(**int** i=1;i<=50;i++)
12. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println([Math](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+math).pow(2,i));
13. }
14. }

 stdout

2.0

4.0

8.0

16.0

32.0

64.0

128.0

256.0

512.0

1024.0

2048.0

4096.0

8192.0

16384.0

32768.0

65536.0

131072.0

262144.0

524288.0

1048576.0

2097152.0

4194304.0

8388608.0

1.6777216E7

3.3554432E7

6.7108864E7

1.34217728E8

2.68435456E8

5.36870912E8

1.073741824E9

2.147483648E9

4.294967296E9

8.589934592E9

1.7179869184E10

3.4359738368E10

6.8719476736E10

1.37438953472E11

2.74877906944E11

5.49755813888E11

1.099511627776E12

2.199023255552E12

4.398046511104E12

8.796093022208E12

1.7592186044416E13

3.5184372088832E13

7.0368744177664E13

1.40737488355328E14

2.81474976710656E14

5.62949953421312E14

1.125899906842624E15

8>Write a JAVA program to reverse a given number of 5 digits.

1. 8>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. **int** n, reverse = 0;
12. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("Enter a number to reverse");
13. Scanner in = **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
14. n = in.nextInt();
16. **while**(n != 0)
17. {
18. reverse = reverse \* 10;
19. reverse = reverse + n%10;
20. n = n/10;
21. }
23. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("Reverse of the number is " + reverse);
24. }
25. }

 stdin

2325

 stdout

Enter a number to reverse

Reverse of the number is 5232

9>Write a JAVA program find the median of n numbers given by user

1. 9>**import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {Scanner sc=**new** Scanner ([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
10. **int** t,t1,t2;**float** median;
11. **int** n=sc.nextInt();
12. **int**[] a= **new** **int**[n];
13. **for**(**int** i=0;i<n;i++)
14. {
15. a[i]=sc.nextInt();
16. }
17. [Arrays](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+arrays).sort(a);
18. **if**(n%2!=0)
19. { t=(n+1)/2;
20. median=a[t-1];
21. }
22. **else**
23. { t1=n/2;
24. t2=t1+1;
25. median=(a[t1-1]+a[t2-1])/2;
26. }
27. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(median);
29. }
30. }

Top of Form

Bottom of Form

 stdin

5

5 6 2 3 1

 stdout

 3.0

10>Write a JAVA program to find the maximum of three numbers using ternary operator.

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;

6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. Scanner sc=**new** Scanner ([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. **int** a=sc.nextInt();
12. **int** b=sc.nextInt();
13. **int** c=sc.nextInt();
14. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println( a>b?(a>c?a+ "is max":c+" is max"):(b>c?b+" is max":c+" is max"));
15. }
16. }

 stdin

1 2 3

 stdout

3 is max

11>Evaluate the following expressions

1. x = 2 % 2 + 2\* 2 - 2 / 2;

ANS- 0+4-1;

0+3;

3;

1. Given a=4, b=5 and c=6; Find ((a < b) || (b > c) & &(a > b) || (!(a > c)))

ANS-(true OR false AND false OR true)

(true AND true)

(true)

1. i=8, j=5, x=0.005, y=-0.01 Find 5\* ((i / 7) + ( j \*(i − 3))%(x + y − 2 + i))

ANS- 5\*(1+(5\*5)%(6.015)

5\*(1+25%6.015)

5\*1.94

9.70

(iv) Given x=10 find y=--x \* x—

ANS- 81

1. y=(t=6, 7\*t+2)

ANS-44

12>Write a JAVA program which reads two numbers x and y, then find the GCD of x and y.

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. **int** c,lar,low;
11. Scanner sc= **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
12. **int** x=sc.nextInt();
13. **int** y=sc.nextInt();
14. **if**(x<y)
15. { low=x;
16. lar=y;
17. }
18. **else**
19. {low=y;
20. lar=x;
21. }
22. **while**(low >0)
23. {
24. lar=lar%low;
25. c=low;
26. low=lar;
27. lar=c;
28. }
30. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println("GCD is - "+ lar);

33. }
34. }

 stdin

54 24

 stdout

GCD is - 6

13> Write a JAVA program to find the sum of integers between 50 and 100, which are divisible by 7.

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {**int** sum=0;
10. **for**(**int** i=51;i<100;i++)
11. {**if**(i%7==0)
12. sum=sum+i;
13. }
14. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(sum);
15. }
16. }

 stdout

539

14> Write a JAVA program to find the factorial of number using (i) for loop (ii) while loop (iii) do loop

a>

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {**int** pdt=1;
10. Scanner sc= **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. **int** n=sc.nextInt();
12. **for**(**int** i=2;i<=n;i++)
13. pdt=pdt\*i;
14. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(pdt);
15. }
16. }

 stdin

5

 stdout

120

b>

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {
10. **int** pdt=1,i=1;
11. Scanner sc= **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
12. **int** n=sc.nextInt();
13. **while**(i<=n)
14. {
15. pdt=i\*pdt;
16. i++;
17. }[System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(pdt);
18. }
19. }

 stdin

5

 stdout

120

c>

1. **import** java.util.\*;
2. **import** java.lang.\*;
3. **import** java.io.\*;
5. */\* Name of the class has to be "Main" only if the class is public. \*/*
6. **class** Ideone
7. {
8. **public** **static** **void** main ([String](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+string)[] args) **throws** java.lang.[Exception](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+exception)
9. {**int** pdt=1,i=0;
10. Scanner sc= **new** Scanner([System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).in);
11. **int** n=sc.nextInt();
12. **do**
13. {i++;
14. pdt=pdt\*i;
15. }**while**(i<n);
16. [System](http://www.google.com/search?hl=en&q=allinurl%3Adocs.oracle.com+javase+docs+api+system).out.println(pdt);
17. }
18. }

 stdin

5

 stdout

120

15>Enlist the common utilities under import statements that you know in JAVA.

15> Scanner, Currency, Random, String tokenizer, Date, Abstract list.