

Laboratory 1

Ap1.1

Attention! You only need to put the code as text on the site (by copy end paste)

Create a new class: **Lab_01_1_surname_name**

Read four real numbers (double) a , b , c and d from the keyboard using Scanner class

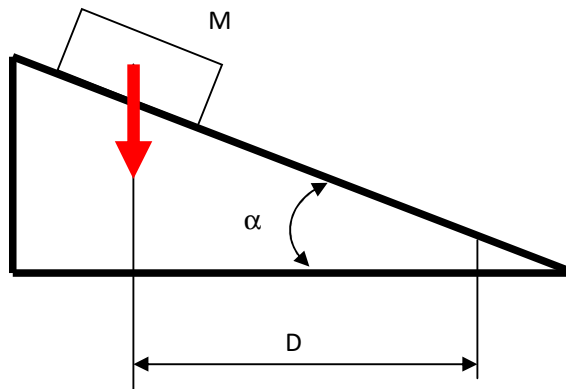
```
Scanner input = new Scanner(System.in);
System.out.print("a=");
a=input.nextDouble();
...
input.close();
```

calculate and display on the monitor (result is calculated in a variable rand then the result is displayed)

```
r=a+b;
System.out.println("1. a+b="+r);
```

1. $a+b=$
2. $b-c=$
3. $c*d=$
4. $d/a=$
5. number $\pi=$
6. number $e=$
7. assuming that a is in radians calculate: $\sin(a)=$
8. assuming that a is in degrees calculate: $\sin(a)=$
9. $\cos(b)=$
10. $\tan(c)=$
11. $\cotangent(d)=$
12. $\arcsin(a)=$ (result must be in degrees)
13. $\arccos(a)=$ (result must be in degrees)
14. $\arctan(d/c)=$ (result must be in degrees)
15. $\text{atan2}(d,c)=$ (result must be in degrees)
16. $\arctan((-d)/(-c))=$ (result must be in degrees)
17. $\text{atan2}(-d,-c)=$ (result must be in degrees)
18. $\log_e(a)=$
19. $\log_{10}(b)=$
20. $\log_e(d)+1=$
21. $e^a=$
22. $e^b-1=$
23. $\sqrt{a}=$
24. $\sqrt[3]{d}=$
25. $\sqrt{c^2 + d^2}=$
26. Sign of $b=$
27. $|c|=$

28. $|-c| =$
29. $\text{ceil}(-c) =$
30. $\text{floor}(-c) =$
31. $\text{round}(-c) =$
32. $a^b =$
33. consider $x_1=a, x_2=b, y_1=b, y_2=d$, calculate distance between $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$
34. Areas of a square (side= a), a rectangle(sides: c and d), a circle (radius= b), right triangle (the legs of the right triangle are: a and d)
35. Given a force $F=10000\text{N}$ acting on the surfaces defined on the previous point, what are the pressures?
36. Given $T=a[^\circ\text{C}]$ calculate temperature in Kelvin and Fahrenheit
37. What is the work? (given $M=a[\text{Kg}]$, $D=b[\text{mm}]$, $\alpha=c[^\circ]$)



Math class methods

Trigonometric

sin
cos
tan
asin
acos
atan
atan2
cosh
sinh
tanh

Logarithmic

log
log10
log1p

Roots

cbrt
sqrt
hypot

Other

abs
ceil
floor
pow
rint
round
todegrees
toradians

Euler's Number

exp
expm1

Signum Function

signum

Example, to call the sin function writes:

`Math.sin(...)`