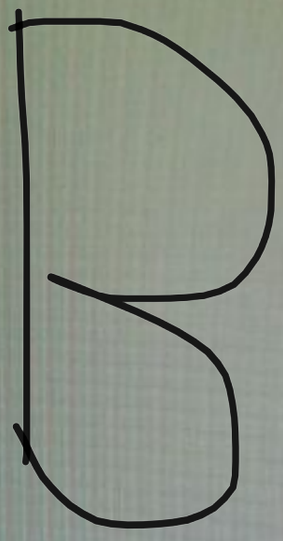
MKCL OES

Question No. 1

The solution of the equation $\ln(3x) = 2$ is

- $\frac{e^3}{2}$
- $\frac{e^2}{3}$
- e^2
- $3e^2$



Save & Next

Question No. 2

The solution of the equation $2^x = 3^{2x-1}$ is

- $\frac{\ln 2}{2\ln 3 - \ln 2}$
- $\frac{\ln 3}{\ln 2 - 2\ln 3}$
- $\frac{\ln 3}{2\ln 3 - \ln 2}$
- $\frac{\ln 2}{\ln 2 - 2\ln 3}$

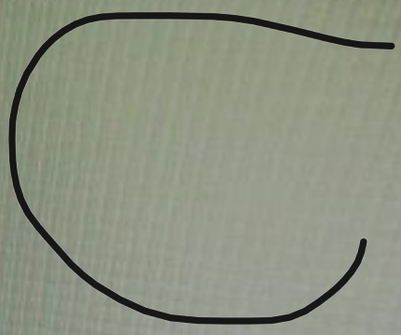
B

Save & Next

Question No. 3

The solution set of the equation $e^{2x} = 1$ is

- $\emptyset$
- $\{1\}$
- $\{0\}$
- $\left\{\frac{1}{2}\right\}$



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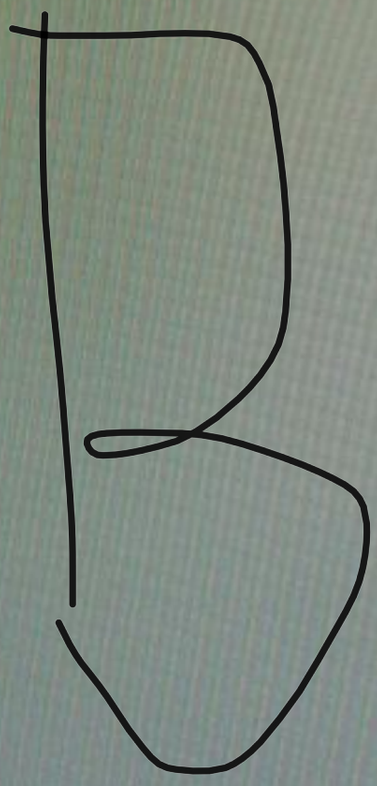
MKCL OES

Question No. 4

Given that $f(x) = 3^{2x+1} - 1$. Then $f(-1) =$

- -1
- $\frac{-2}{3}$
- $\frac{2}{3}$
- 2



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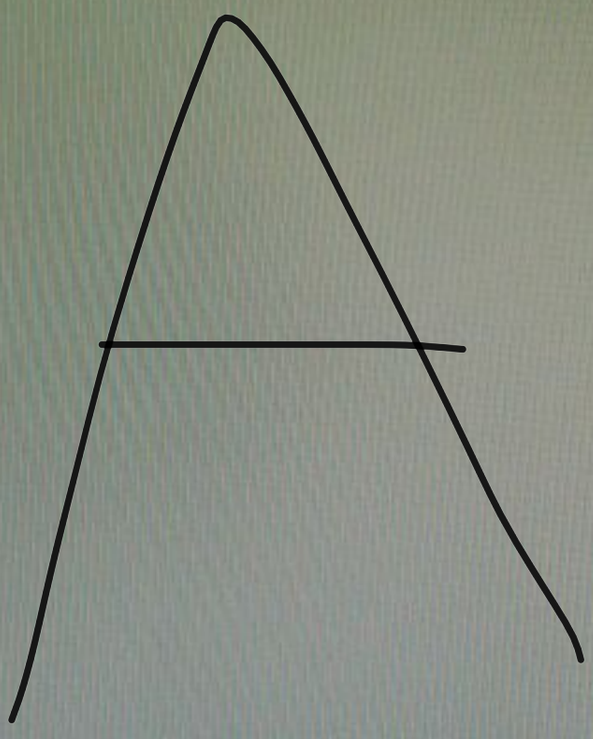
MKCL OES

Question No. 5

The horizontal asymptote to the graph of $f(x) = 3^{x-1} + 2$.

- y = 2
- y = 3
- y = -2
- x = -2



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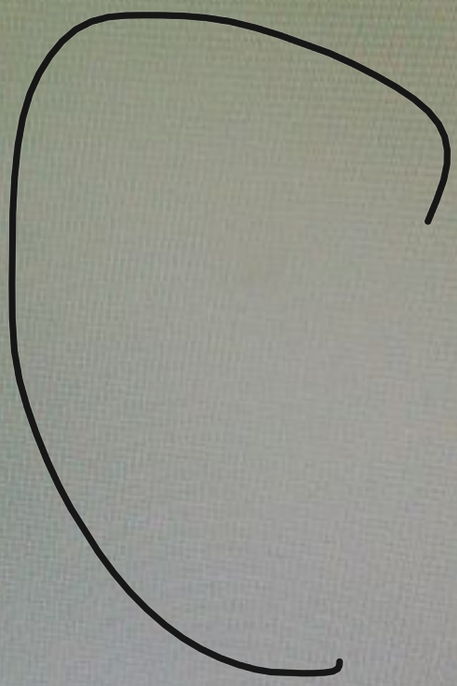
MKCL OES

Question No. 6

The solution of the exponential equation $\left(\frac{3}{2}\right)^{2x+1} = \frac{4}{9}$ is

- $x = \frac{1}{2}$
- $x = \frac{3}{2}$
- $x = \frac{-3}{2}$
- $x = \frac{4}{9}$



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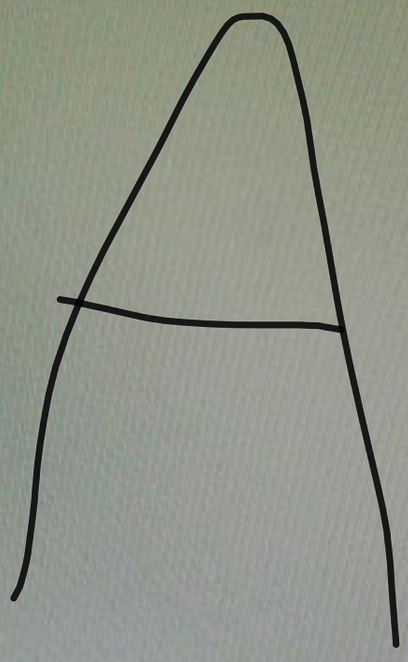
Question No. 7

Given that $f(x) = \log_{\frac{1}{2}}(x + 2)$, then $f(-2)$ is

- Undefined
- 0
- -2
- $\frac{1}{2}$



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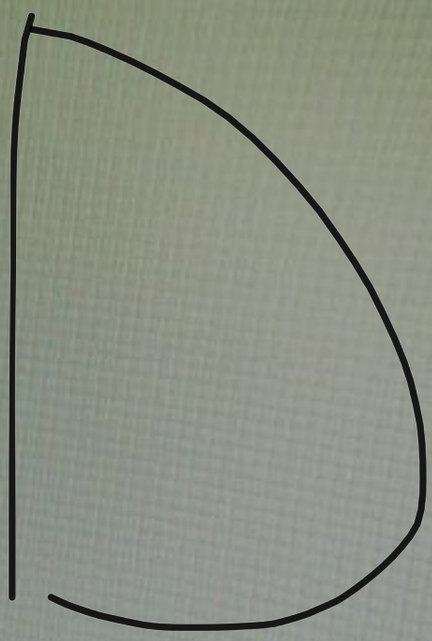
MKCL OES

Question No. 8

The domain of the function $f(x) = 1 - \log_4(x - 2)$ is

- $(0, \infty)$
- $(-\infty, 2)$
- $(-\infty, \infty)$
- $(2, \infty)$



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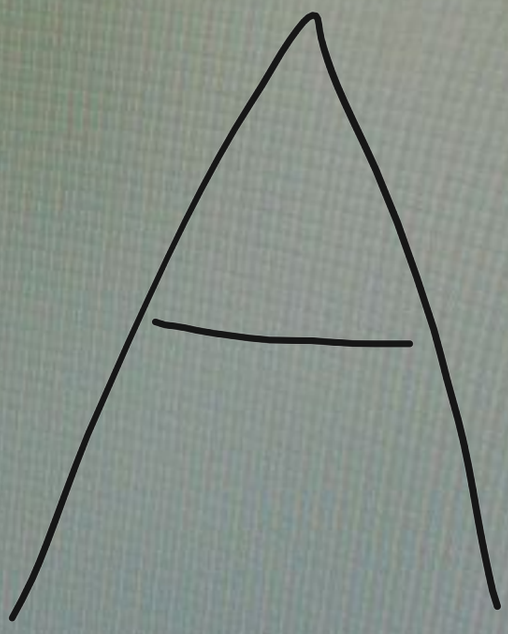
Question No. 9

For $x > 0,\ y > 0, and\ z > 0,\ \log_2\left(\frac{xy^2}{2\sqrt{z}}\right) =$

- $-1 + \log_2 x + 2\log_2 y - \frac{1}{2}\log_2 z$
- $1 + \log_2 x + 2\log_2 y - \frac{1}{2}\log_2 z$
- $-1 + \log_2 x + \log_2 y - \frac{1}{2}\log_2 z$
- $-1 + \log_2 x + 2\log_2 y + \frac{1}{2}\log_2 z$



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Question No. 17

The solution set of an identity equation is

- the set of natural numbers
- the set of real numbers
- the empty set
- the set of some numbers that satisfy the equation

B

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MKCL OES

Question No. 18

The quotient $\frac{2-3i}{4-3i}$ can be written as

1. $-\frac{17}{25}+\frac{6}{25}i$
2. $\frac{17}{25}+\frac{6}{25}i$
3. $\frac{17}{25}-\frac{6}{25}i$
4. $-\frac{17}{25}-\frac{6}{25}i$

C

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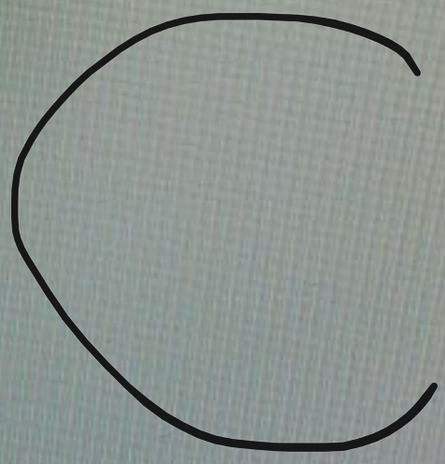
MKCL OES

Question No. 19

Solve: $6x^2 + 7x - 3 = 0$

- $x = 2 + i \quad or \; x = 2 - i$
- $x = 3 \quad or \quad x = -1$
- $x = \frac{1}{3} \quad or \; x = \frac{-3}{2}$
- $x = \frac{3}{2} \quad or \; x = -\frac{1}{3}$



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Question No. 20

Solve $x^2 + x < 6$

- $(-\infty, -2) \cup (3, \infty)$
- $(-2, 3)$
- $(-3, 2)$
- $(-\infty, -3) \cup (2, \infty)$

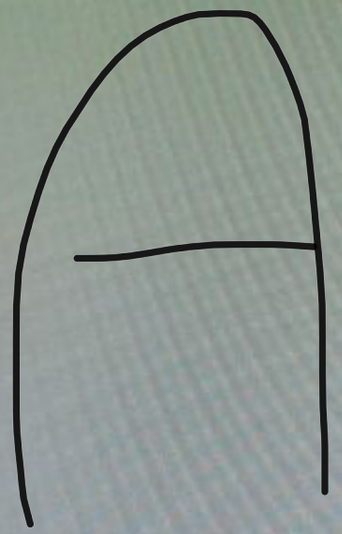
B

Save & Next

Question No. 21

The solution set of the following equation: $|x+1|=|2x-3|$ is

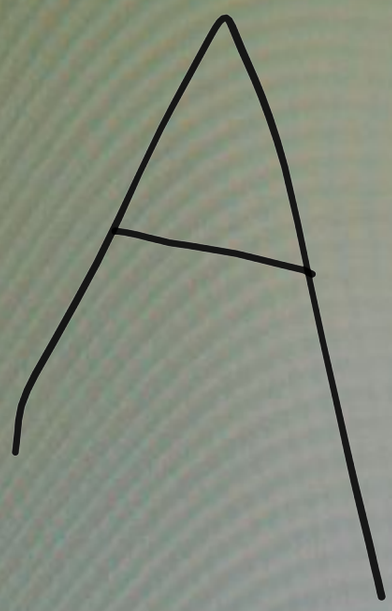
- $\left\{4, \frac{2}{3}\right\}$
- $\left\{-4, \frac{2}{3}\right\}$
- $\left\{4, -\frac{2}{3}\right\}$
- ϕ



Question No. 22

If $f(x)=\frac{3}{x^2+x+1}$ then $f(-2)=$

- 1
- 0
- not defined
- -1



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Question No. 23

Give the y-intercept of the line y= 4x-7

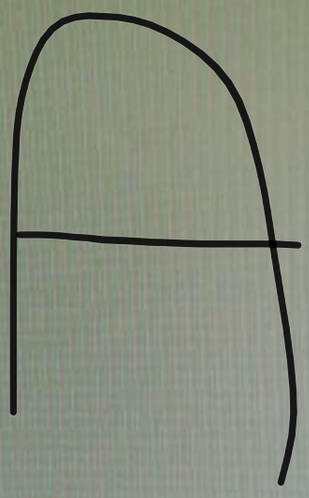
- -7
- 7
- 4
- -4

Save & Next جतन करके पुढे

Question No. 24

Find the equation of the line passes through the two points (2,3) and (1,-4).

- y=7x - 11
- y = 3x - 12
- y =-3x + 12
- y=-7x + 11



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Question No. 25

Let $f(x) = \frac{2}{x+5}$ and $g(x) = x-5$, then $(f \circ g)(x) =$

- $\frac{1}{x}$
- $\frac{2}{x}$
- $\frac{2}{x-1}$
- $\frac{2}{x+1}$

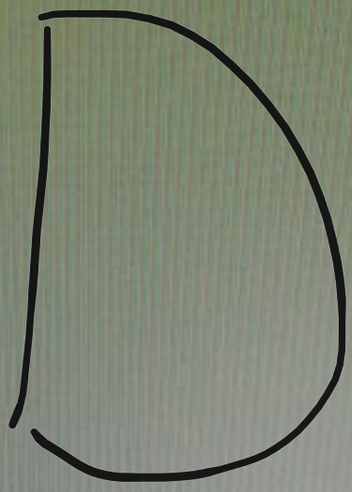
B

Save & Next जतन व पुढील

Question No. 26

Let $f(x)=x^2+x+2$ and $g(x)=x-1$, then the domain of $(f+g)(x)$ is

- $[-\infty,1]$
- $[-\infty,0]$
- $(0,9)$
- $(-\infty,\infty)$



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Question No. 27

The function $f(x) = x^2 - x + 1$ is

- Cubic
- Linear
- Quadratic
- Quartic

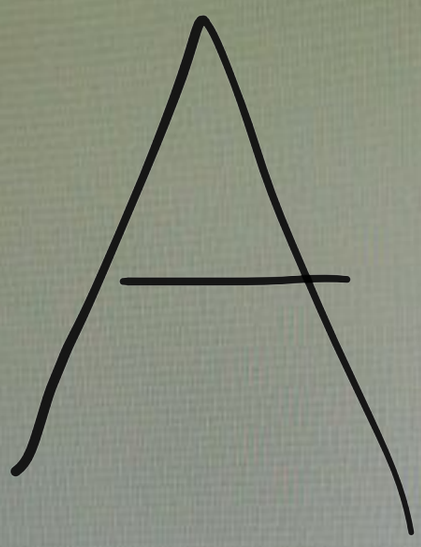
C

Save & Next

Question No. 28

If $f(x) = -(x+3)^2 + 5$, then the vertex of the graph of f is

- (-3,5)
- (-3,-5)
- (3,5)
- (-1,-5)



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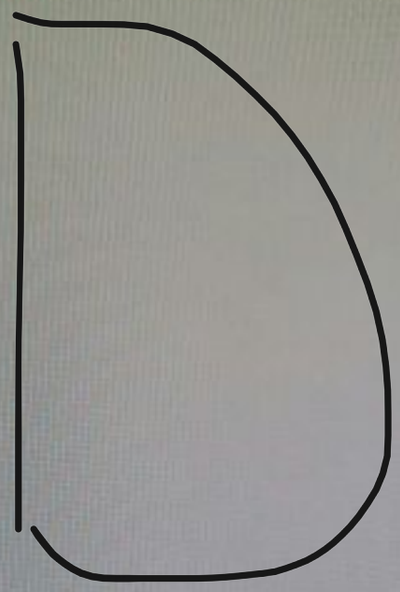
Question No. 29

The quotient of the division $(2x^3 + 4x^2 - 5x + 7) \div (x - 2)$ is:

- $3x^2 - x + 3$
- $2x^2 - x - 11$
- $3x^2 + x + 3$
- $2x^2 + 8x + 11$



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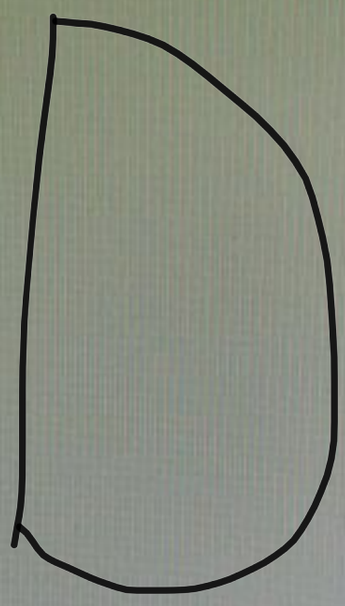
Question No. 30

The degree of the quotient of the division:

$$(2x^7 - 6x^5 + 3x - 5) \div (x + 8) \text{ equals:}$$

- 9
- 8
- 7
- 6



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Question No. 31

If x-1 is a factor of the polynomial f(x) then

- f(0) = -1
- f(1) = 0
- f(-1) = 0
- f(0) = 1

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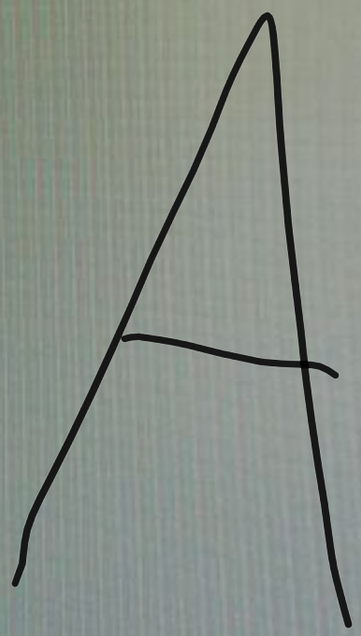
MKCL OES

Question No. 32

Which of the following functions is one to one

- F= {(-3,123), (0, 10), (4,-12), (1,-15)}
- F= {(-3,-2), (0, 4), (3,-2), (1,-5)}
- F= {(3, 15), (6, 10), (3,-12), (1, 15)}
- F= {(4, 6), (1, 0), (5,-2), (1, 6)}



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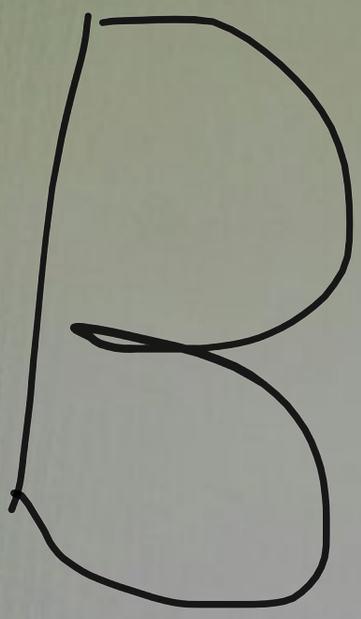
Question No. 33

Which of the following functions is one to one

- $f(x)=52x^2-12$
- $f(x)=-7x+15$
- $f(x)=\sqrt{25-x^2}$
- $f(x)=-22x^2+25$



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Question No. 34

If f(x) = 2x + 4, then

- $f^{-1}(x) = -\frac{1}{2}x + 4$
- $f^{-1}(x) = \frac{1}{2}x + 2$
- $f^{-1}(x) = \frac{1}{2}x - 2$
- $f^{-1}(x) = -\frac{1}{2}x - 4$

C

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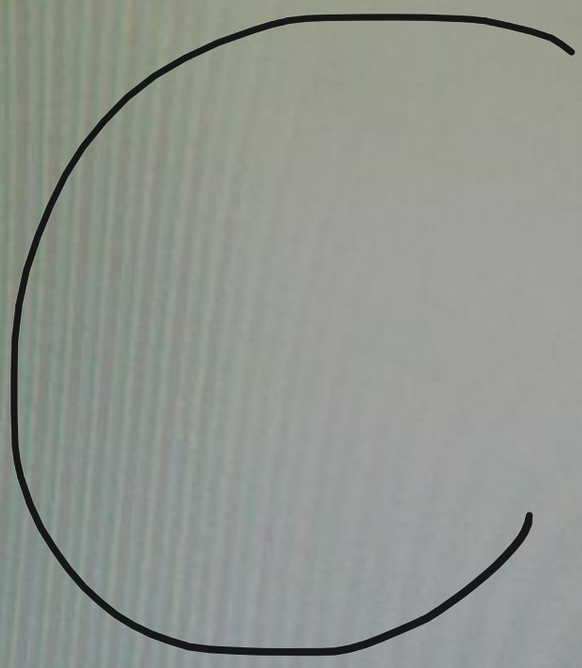
Question No. 35

If $0^\circ < \theta < 90^\circ$ then θ is called

- a right angle
- an obtuse angle
- an acute angle
- a straight angle



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Question No. 36

The complement of the angle 60° is:

- 140°
- 30°
- 120°
- 70°

B

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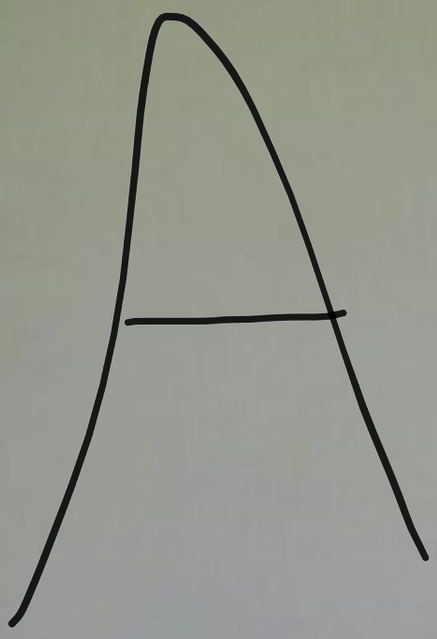
Question No. 37

The supplement of the angle 50° is:

- 130°
- 50°
- 40°
- 150°

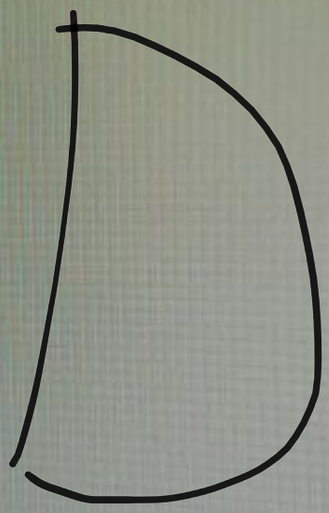


Save & Next جمع وقتي

Question No. 38

If θ is an acute angle in a right triangle, then $\tan\theta =$

- $\frac{\text{adjacent}}{\text{opposite}}$
- $\frac{\text{opposite}}{\text{hypotenuse}}$
- $\frac{\text{adjacent}}{\text{hypotenuse}}$
- $\frac{\text{opposite}}{\text{adjacent}}$

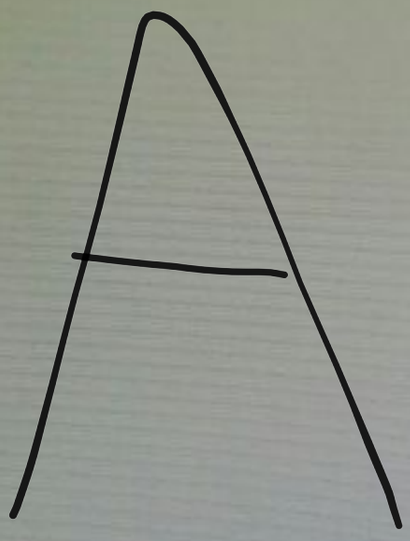


Save & Next

Question No. 39

If $\sin\theta = \frac{4}{5}$ then $\cot\theta =$

- $\frac{3}{4}$
- $\frac{4}{3}$
- $\frac{5}{3}$
- $\frac{3}{5}$



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Question No. 40

The expression $(\cos^2\theta + \sin^2\theta)$ equals

- $\sec^2\theta$
- -1
- 1
- $\csc^2\theta$

C

Save & Next जतन व पुढील