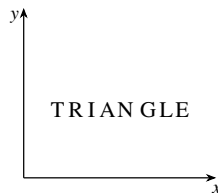


- 1) Getting to the top is _____ than staying on the top [2021 CE]

- a) more easy c) easiest
b) much easy d) easier

- 2) The mirror image of the below text above the x - axis is [2021 CE]



ELGIN AIRT

- a)

ENDING

- b)

ELDON ART

- c)

ELGN AIRT

- d)

- 3) In a company, 35% of the employees drink coffee, 40% of the employees drink tea and 10% of the employees drink both tea and coffee. What % of employees drink neither tea nor coffee? [2021 CE]

- a) 15 b) 25 c) 35 d) 40

- 4) \oplus and \odot are two operators on numbers p and q that $p \oplus q = \frac{p^2+q^2}{pq}$ and $p \odot q = \frac{p}{q}$;
If $x \oplus y = 2$, then $x =$ [2021 CE]

- a) $\frac{y}{2}$ b) y c) $\frac{3y}{2}$ d) $2y$

- 5) Four persons P, Q, R and S are to be seated in a row, all facing the same direction, but not necessarily in the same order. P and R cannot sit adjacent to each other. S should be seated to the right of Q . The number of distinct seating arrangements possible is: [2021 CE]

- a) 2 b) 4 c) 6 d) 8

- 6) Statement: Either P marries Q or X marries Y
Among the options below, the logical **NEGATION** of the above statement is: [2021 CE]

- a) P does not marry Q and X marries Y .
b) Neither P marries Q nor X marries Y .
c) X does not marry Y and P marries Q .
d) P marries Q and X marries Y .

- 7) Consider two rectangular sheets, Sheet M and Sheet N of dimensions $6\text{cm} \times 4\text{cm}$ each.

Folding operation 1: The sheet is folded into half by joining the short edges of the current shape.

Folding operation 2: The sheet is folded into half by joining the long edges of the current shape.

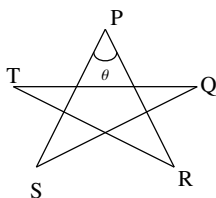
Folding operation 1 is carried out on Sheet M three times.

Folding operation 2 is carried out on Sheet N three times.

The ratio of perimeters of the final folded shape of Sheet N to the final folded shape of Sheet M is _____ [2021 CE]

- a) 13 : 7 c) 7 : 5
b) 3 : 2 d) 5 : 13

- 8) Five line segments of equal lengths, PR, PS, QS, QT and RT are used to form a star as shown in the figure below. The value of θ , in degrees, is _____ [2021 CE]



- a) 36
b) 45

- c) 72
d) 108

9) A function, λ , is defined by

$$\lambda(p, q) = \begin{cases} (p - q)^2 & \text{if } p \geq q \\ p + q, & \text{if } p < q \end{cases}$$

The value of the expression $\frac{\lambda(-(-3+2), (-2+3))}{(-(-2+1))}$ is: [2021 CE]

- a) -1
b) 0

- c) $\frac{16}{3}$
d) 16

10) Humans have the ability to construct worlds entirely in their minds, which don't exist in the physical world. So far as we know, no other species possesses this ability. This skill is so important that we have different words to refer to its different flavors, such as imagination, invention and innovation.

Based on the above passage, which one of the following is **TRUE**? [2021 CE]

- a) No species possess the ability to construct worlds in their minds.
b) The terms imagination, invention and innovation refer to unrelated skills.
c) We do not know of any species other than humans who possess the ability to construct mental worlds.
d) Imagination, invention and innovation are unrelated to the ability to construct mental worlds.

11) The rank of the matrix $\begin{pmatrix} 1 & 2 & 2 & 3 \\ 3 & 4 & 2 & 5 \\ 5 & 6 & 2 & 7 \\ 7 & 8 & 2 & 9 \end{pmatrix}$ is [2021 CE]

- a) 1 b) 2 c) 3 d) 4

12) If $P = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$ and $Q = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$ then $Q^T P^T$ is [2021 CE]

- a) $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$ b) $\begin{pmatrix} 1 & 3 \\ 2 & 4 \end{pmatrix}$ c) $\begin{pmatrix} 2 & 1 \\ 4 & 3 \end{pmatrix}$ d) $\begin{pmatrix} 2 & 4 \\ 1 & 3 \end{pmatrix}$

13) The shape of the cumulative distribution function of Gaussian distribution is [2021 CE]

- a) Horizontal line
b) Straight line at 45 degree angle
c) Bell-shaped
d) S-shaped