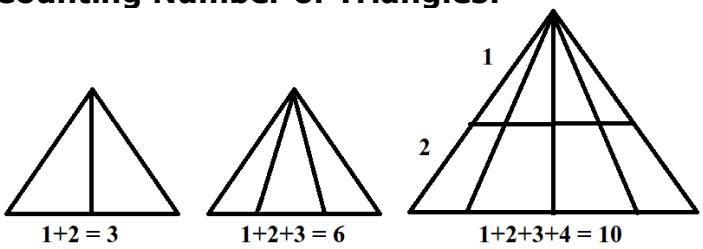
# Counting of Figures

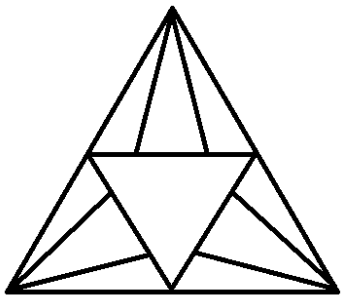
# COUNTING OF FIGURES

This type of Questions involves the problems relating to the counting of Geometrical figures in a given complex figure i.e. counting number of triangles, squares, rectangles, straight lines, surface counting etc. There are various approaches for determining the number of any particular type of figure by the analysis of the complex figure some of them are shown below:

**Counting Number of Triangles:**



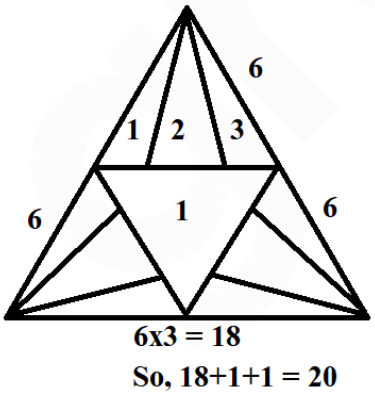

**Que: Find the number of triangles in the given figure:**



A. 18
B. 17
C. 12
D. 20

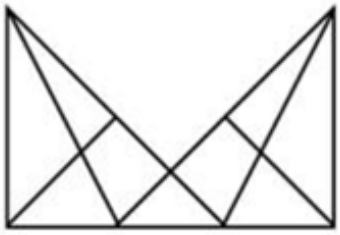
Ans. A

Sol. Here the number of triangles are:

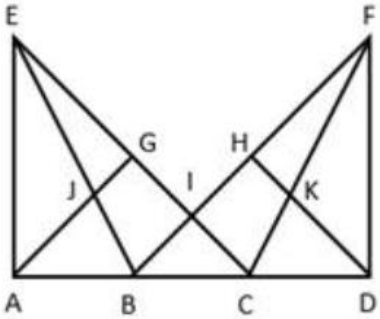



Hence, option A is correct.

**Que. How many triangles are there in the given figure?**

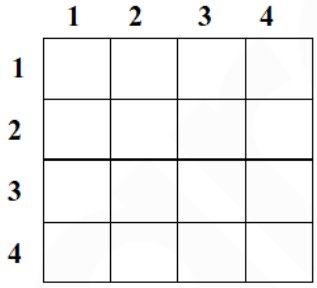


A. 25
B. 19
C. 17
D. 22
Ans. B
Sol.



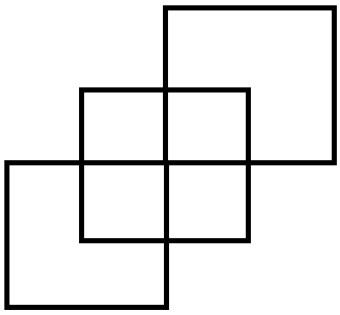

The triangles that we get from the given figure are,
ABE, ABJ, AJE, ACG, ACE, AGE, BCI, BCE, BIE, JGE, DCF, BCF, BDF, CDK, DKF ICF, HKF and BHD, FHD Thus we get 19 triangles.
Hence, option B is correct.

**Counting Number of Squares:**

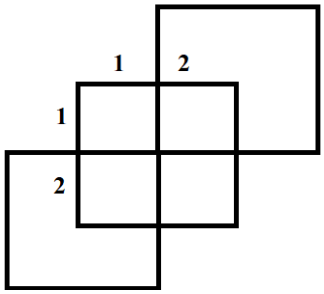



**No. of squares:**
**4×4 = 16**
**3×3 = 9**
**2×2 = 4**
**1×1 = 1**
**Total = 16+9+4+1 = 30**

**Que. How many Squares are there in the given figure?**

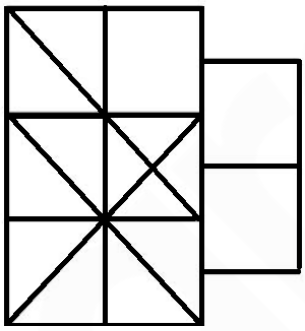


A. 8
B. 9
C. 7
D. 5
Ans. C
Sol. Here the number of Squares are:

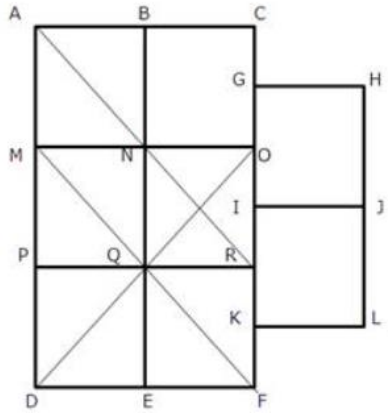



5 + 1 + 1 = 7 Squares.
Hence, option C is correct.

**Que. How many squares are in the given figure?**

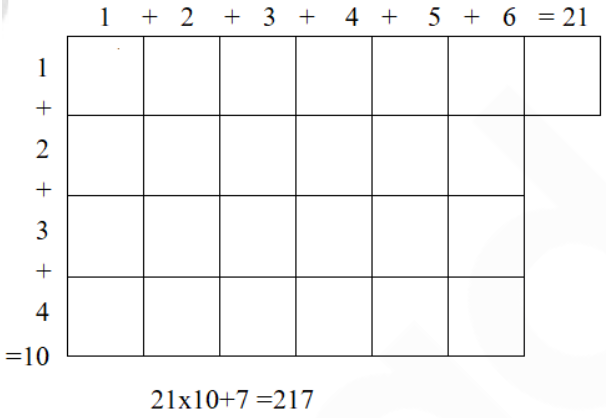


**A. 10**
**B. 9**
**C. 8**
**D. 13**
**Ans. A**
**Sol.**



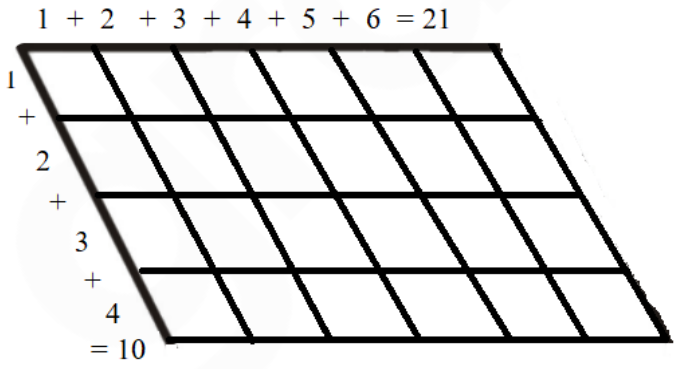

There are total 10 squares in all; GHJI, IJLK, ABNM, BCON, MNQP, NORQ, PQED, QRFE, ACRP, MOFD.
Hence, option A is correct.

**Counting Number of Rectangles:**

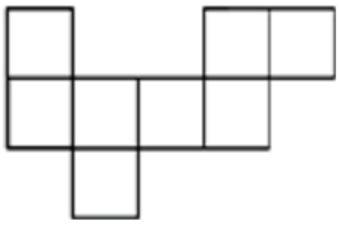



21x10+7 =217

**Note: Numbers of parallelogram also count as Rectangles:**

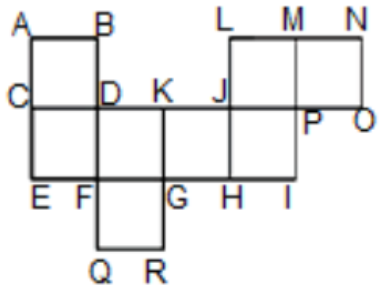



**Que. How many rectangles (not square) can you see in the figure?**



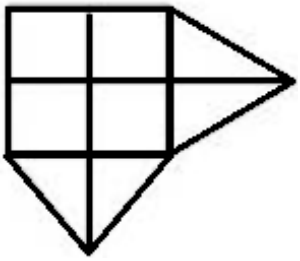
A. 9

B. 8
C. 10
D. 7
Ans. C
Sol.

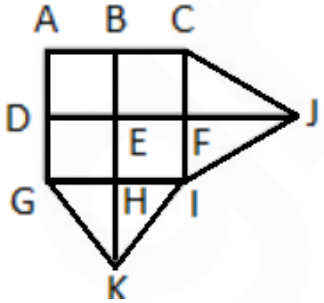



The rectangles are - ABEF, CKEG, CJEH, PIKG, PIDF, DKQR, HILM, LNJO, DJFH, CPEI.
There are total of 10 rectangles.
Hence, option C is correct.

**Que. How many Quadrilaterals are there in the given figure?**

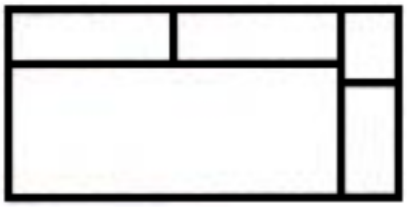


A. 15
B. 18
C. 19
D. 21
Ans. B
Sol.

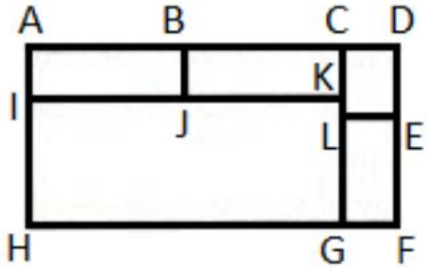



The quadrilaterals that we get from the given figure are,
ABED, BCFE, DEHG, EFIH, ABHG, BCIH, ADFC, GDFI, JCBE, JEHI, JCAD, JDGI, DEGK, ABGK, EFIK, BCIK, ACIG and KEJI.
Thus, we get 18 quadrilaterals.
Hence, option B is correct.

**Que. How many rectangles are there in the given figure?**



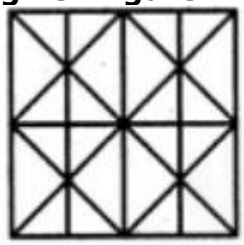
A. 6
B. 7
C. 8
D. 9
Ans. D
Sol.



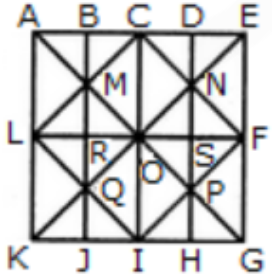

The Rectangles are: ABJI, BCKJ, CDEL, LEFG, IKGH, CDFG, ACGH, ACKI, ADFH.
Thus, there are 9 rectangles.
Hence, option D is correct.

**Counting Number of Straight lines:**
# Minimum number of straight lines = 1

**Que. Find the minimum number of straight lines required to make the given figure.**



A. 11
B. 14
C. 16
D. 17
Ans. B
Sol.




The horizontal lines are AK, BJ, CI, DH and EG i.e. 5 in number.
The vertical lines are AE, LF and KG i.e. 3 in number.

The slanting lines are LC, CF, FI, LI, EK and AG i.e. 6 in number.
Thus, there are 5 + 3 + 6 = 14 straight lines in the figure.

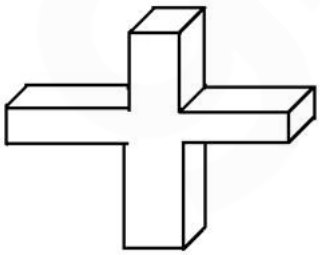
Hence, option B is correct.

**Surface Counting:**
**Que. How many surfaces are there in the given figure?**

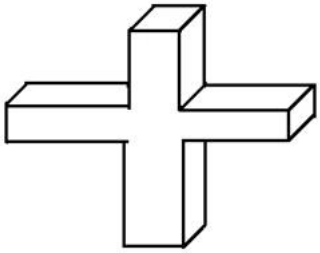
A. 8
B. 7
C. 6
D. 11
Ans. D
Sol. Here the surface is counted from front, back, left, right, top and bottom views.
Thus, in the given figure:

Surface from left view = 2
Surface from right view = 2
Surface from top = 4
Surface from bottom = 1
Surface from back = 1
Surface from front = 1
So, there are 11 surfaces in the given figure.
Hence, option D is correct.

**Que. How many surfaces are present in the following figure?**



A. 13
B. 14
C. 16
D. 18
Ans. B
Sol. The surface is counted from the back, front, top, bottom, left, right views.
Thus in the given figure:



Surface from back view = 1
Surface from front view = 1
Surface from top view = 3
Surface from bottom view = 3
Surface from left view = 3
Surface from right view = 3
So, there are 14 surfaces in the given figure.
Hence, option B is correct.