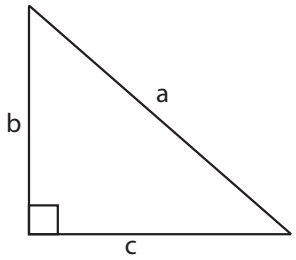
Po Leung Kuk 8th Primary Mathematics World Contest

Team Contest

Note: You may need to use Pythagoras Theorem which states that

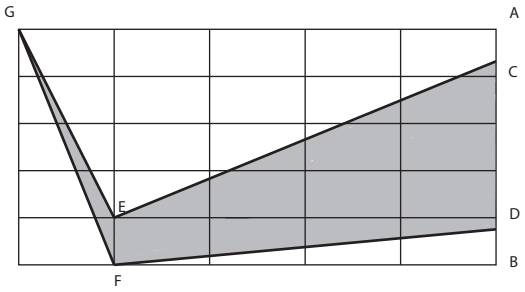
In a right-angled triangle, $a^2 = b^2 + c^2$, where a is the lenght of the longest side, and b and c are the lengths of the other two sides.



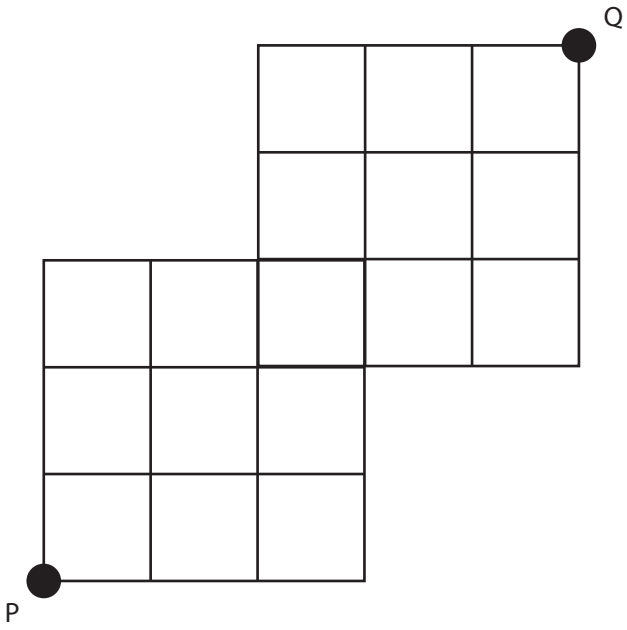
TEAM EVENTS

T1. There are nine fractions between 1/5 and 1/2 such that the difference between any two successive fractions is constant. Find the sum of these eleven fractions.

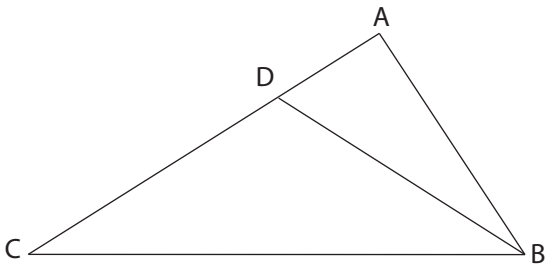
T2. In the foloowing figure, the small rectangles are identical and each has an area of 8cm^2. A, B, E, F and G are vertices of some small rectangles. C and D are points on the line segments AB. If CD=$^2/_3$AB, find the area of the shaded part.



T2. How many shortest path are there from P to Q?



T4. In ΔABC, point D ins on AC, AB = AD and <ABC -<ACB =30º. Find <CBD.



T5. A structure is built with identical cubes. Figure 1 is the top view, Figure 2 is the front view and Figure 3 is he side view. What is the least number of identical cubes required to build this structure?

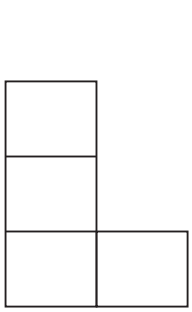


Figure 1

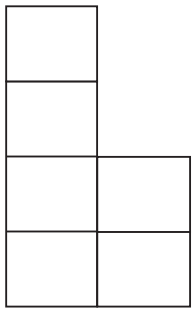


Figure 2

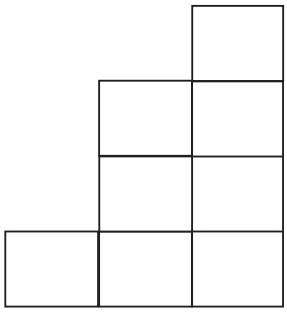
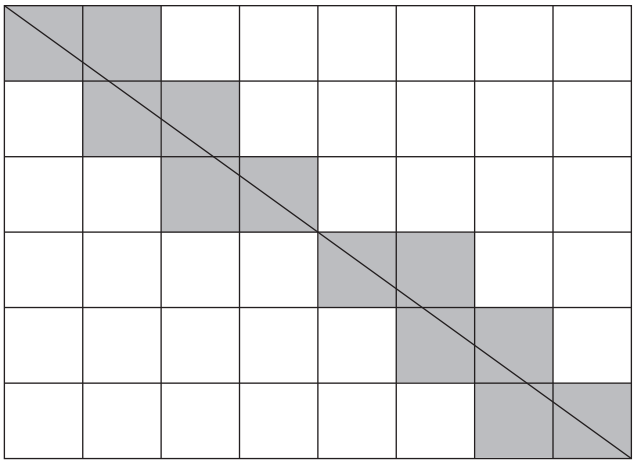
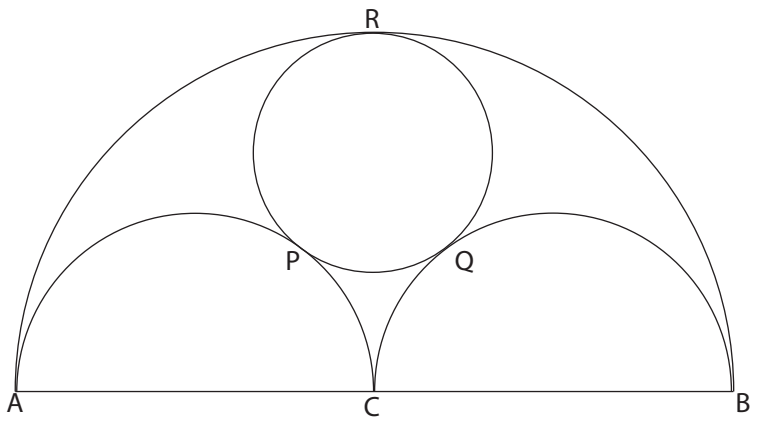


Figure 3

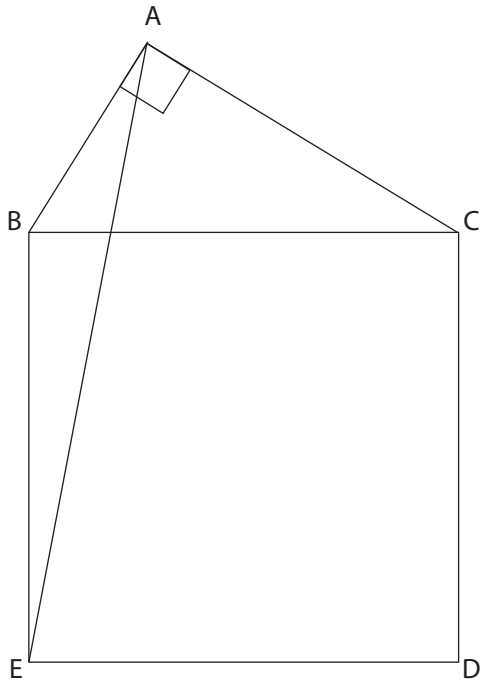
T6. In a rectangle made up of 2004 x 4002 square units, how many square unites can a diagonal line pass through? (For example, the figure below shows a diagonal line of a 6 x 8 rectangle that passess through 12 square units.



T7. In the following figure, AB is a diamete of a circle with center C. Two semi-circles APC and CBQ are drawn on AB. The circle PQR touches all the three semi-circles. If AM= 28 cm, fin the radius of the circle PQR.



T8. The following is a plane figure. BCDE is a square and ΔABC is a right-angled triangle. If AB = 3 cm and BC = 5 cm, find the area of ΔABE



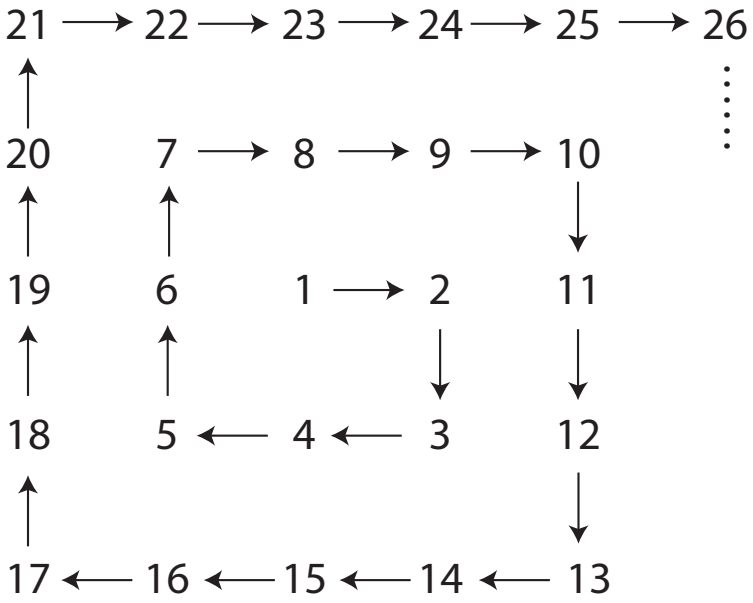
T9. In the following equation, each letter represents a distinct digit.

$$7(ABCXYZ) = 6(XYZABC)$$

A and X are not equal to zero. Find the six digit number ABCXYZ.

(Please show your steps/working/solution clearly.)

T10. Arrange the natural numbers 1, 2, 3, 4, ... in the order as shown in the figure. he numbers 2, 3, 5, 7, 10, ... are called ‘turning numers’ as the arrow-in and arrow-out of these numbers changed directions at the corner. How many ‘turning numbers’ are there between 529 and 1000?



(Please show your steps/working.solution clearly)