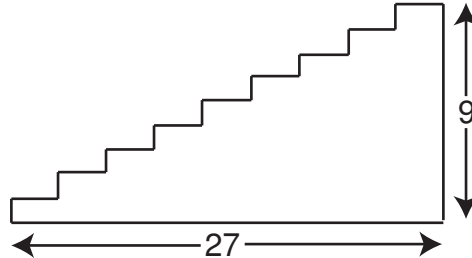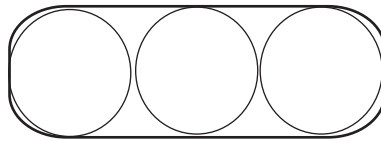# Practice Cayley Number 3

1. Approximately how many million seconds have you been alive?

   a) 4   b) 40   c) 400   d) 4000   e) 40000

2. In the diagram each of the short steps is three units across and one unit up. Calculate the perimeter of this figure.
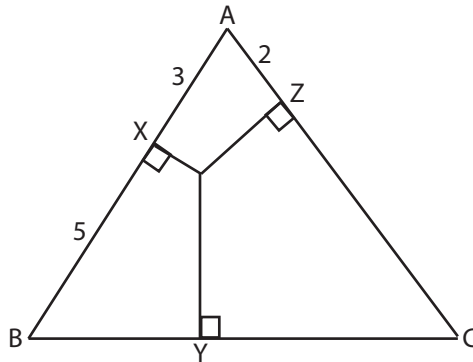

   a) 45   b) 75   c) 60   d) 54   e) 72

3. What is the surface area of a box (a rectangular prism) of length 15, width 8 and height 4?

   a) 480   b) 108   c) 424   d)305   e) 610

4. If the midpoint of $(x, 11)$ and $(47, y)$ is $(25, 14)$, determine $x + y$

   a) 6   b) 9   c) 11   d) 15   e) 20

5. The average mark of a class of 25 students was 64%. If the average mark of those who passed was 72% and the average mark of those who failed was 32%, how many students failed ?

   a) 3   b)5   c) 7   d) 9   e) 11

6. A student was calculating the value of y from the equation $y = 19x + 5$. Unfortunately he made an order of operations error and obtained 190 as his answer. The correct answer was

   a) 24   b) 43   c) 100   d) 81   e) 165

7. Three circles of radius 1 are drawn so that they just touch each other. Their centers lie in a straight line, as shown. If an elastic band is placed around the circles, what is the area inside the elastic band?

   a) $4 + \pi$ b) $4 + 2\pi$ c) $8 + \pi$ d) $8 + 2\pi$ e) $12 + 2\pi$

8. The fraction $\dfrac{n}{144}$,when written as a decimal, terminates. If n is a positive integer, the smallest possible value of n is:

a) less than 10
b) between 10 and 20
c) between 21 and 30
d) between 31 and 40
e) greater than 40

9. From a point P inside equilateral triangle ABC three lines PX, PY and PZ are drawn, each perpendicular to one of the 3 sides. PX meets AB at X, PY meets BC at Y and PZ meets CA at Z. If $AX = 3$, $XB = 5$ and $AZ = 2$, calculate the length of CY.

a) 2   b) 3   c) 4   d) 5   e) 6

10. For how many integer values of n, are both n and $n + 2004$ perfect squares?

a) 1   b) 2   c) 3   d) 4   e) 5