Practice Pascal Number 3

1. Determine the value of $\left(1 + \frac{1}{5}\right)\left(1 + \frac{1}{6}\right)\left(1 + \frac{1}{7}\right)$.

   a) $\frac{211}{210}$ b) $\frac{5}{4}$ c) $\frac{7}{6}$ d) $\frac{3}{2}$ e) $\frac{8}{5}$

2. In triangle ABC, $\angle A$ is twice $\angle B$ and $\angle C$ is three times $\angle B$. Then triangle ABC is

   a) isosceles   b) obtuse   c) equilateral   d) right-angled   e) acute

3. The number 103635 is the product of three consecutive odd numbers. What is the average of these numbers?

   a) 34545   b) 49   c) 161   d) 47   e) 105

4. What is the sum of the integers from -23 to 31, including both -23 and 31?

   a) 220   b) 251   c) 246   d) 196   e)216

5. A clothing store sells 200 suits for $700 each and then, at a sale, sells 100 more suits for $400 each. What was the average price of all the suits sold?

   a) $550   b) $500   c) $600   d) $650   e) $450

6. In $\frac{24871}{17}$, which digits of the numerator must be changed to increase the quotient by exactly 100?

   a) the first only   b) the first and second   c) the second and third   d) third only
   e) the first , second and third

7. What is the area of the pentagon shown?

   a) $\frac{1}{2}a(b - c)$ b) $\frac{1}{2}b(a + c)$ c) $\frac{1}{2}c(a + b)$ d) $\frac{1}{2}b(c - a)$ e) $\frac{1}{2}a(b + c)$
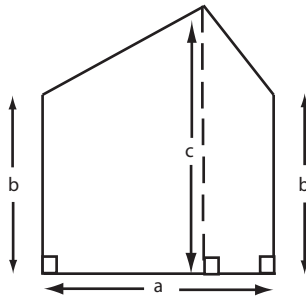
8. The quadrilateral $ABCD$ has perpendicular diagonals AC and BD which meet at P . The area of triangle APB is 12, the area of triangle BCP is 36, and the area of triangle $CDP = 54$. What is the area of triangle DAP?

   a) 12   b) 18   c) 24   d)32   e)36

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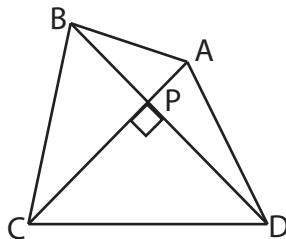
9. If I drive home at 60 km/h, I will arrive 1 hour later than expected. If I drive home at 100 km/h, I will arrive 1 hour earlier than expected. At what speed should I drive home to arrive at the exact time I am expected?

   a) 70 km/h   b)75 km/h   c)80 km/h   d)85 km/h   e)90 km/h

10. Triangles ABC and CDE are equilateral. If their common base BCD is a straight line with $BC = 2$ and $CD = 1$, determine the length AE.

    a) 1   b) 2   c) $\frac{3}{2}$ d) $\sqrt{2}$ e) $\sqrt{3}$