0 (a). Evaluate $2 \times 0 + 1 \times 4$.

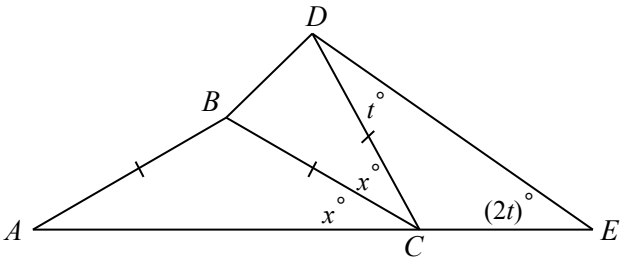
0 (b). Let $t$ be TNYWR.
The average of the list of five numbers $13, 16, 10, 15, 11$ is $m$.
The average of the list of four numbers $16, t, 3, 13$ is $n$.
What is the value of $m - n$?

0 (c). Let $t$ be TNYWR.
The lines with equations $y = 12$ and $y = 2x + t$ intersect at the point $(a, b)$. What is the value of $a$?

1 (a). Evaluate $\frac{1}{2}\left(\frac{1}{\frac{1}{9}}+\frac{1}{\frac{1}{6}}-\frac{1}{\frac{1}{5}}\right)$.

1 (b). Let $t$ be TNYWR.
Determine the positive integer $x$ that satisfies $2 : m : t = m : 32 : x$.

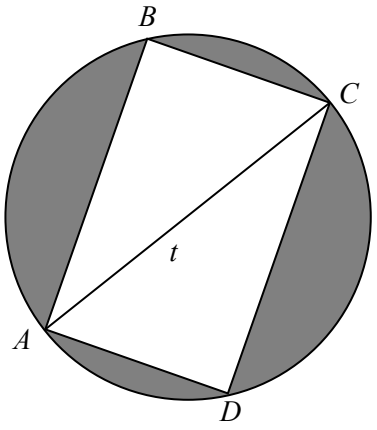
1 (c). Let $t$ be TNYWR.
In the diagram, $C$ lies on $AE$ and $AB = BC = CD$. If $\angle CDE = t°$, $\angle DEC = (2t)°$, and $\angle BCA = \angle BCD = x°$, determine the measure of $\angle ABC$.



2 (a). Suppose that $a$ and $b$ are positive integers with $2^a \times 3^b = 324$.
Evaluate $2^b \times 3^a$.

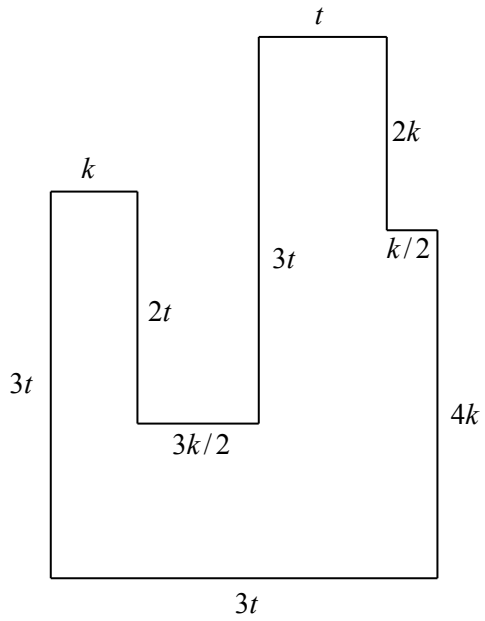
2 (b). Let $t$ be TNYWR.
Three siblings share a box of chocolates that contains $t$ pieces. Sarah eats $\frac{1}{3}$ of the total number of chocolates and Andrew eats $\frac{3}{8}$ of the total number of chocolates. Cecily eats the remaining chocolates in the box. How many more chocolates does Sarah eat than Cecily eats?

2 (c). Let $t$ be TNYWR.
In the diagram, the vertices of rectangle $ABCD$ lie on a circle. Diagonal $AC$ is a diameter of the circle and has length $t$. If $CD = 2AD$, find the area of the shaded region, and write your answer in the form $a\pi - \frac{b}{c}$ with $a, b, c$ positive integers and with $b$ and $c$ having no common positive divisor larger than 1.



3 (a). What is the greatest common divisor of the three integers 36, 45 and 495?

3 (b). Let $t$ be TNYWR.
In the diagram, all line segments meet at right angles. If the perimeter of the given shape is 162 units, what is the value of $k$?




3 (c). Let $t$ be TNYWR.
The expression $(tx + 3)^3$ can be re-written in the form $ax^3 + bx^2 + cx + d$ for some positive integers $a, b, c, d$. Determine the value of the largest of $a$, $b$, $c$, and $d$.