Analytic Geometry

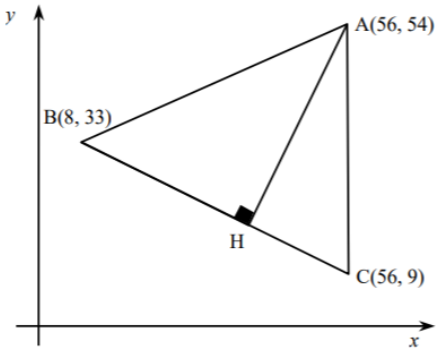
1) The following table provides information about a series of lines in the Cartesian plane.

Line ℓ_1	The slope of line ℓ_1 is 2. The x-intercept of line ℓ_1 is -5.
Line ℓ_2	Points (0, 12) and $(-4, 0)$ are on line ℓ_2.
Line ℓ_3	The equation of line ℓ_3 is $20x - 5y + 70 = 0$.
…	…
Line ℓ_5	?
…	…
Line ℓ_7	Line ℓ_7 is parallel to the line $\frac{x}{5} + \frac{y}{-40} = 1$. Point $(-2, 6)$ is on line ℓ_7.

What is the equation of line ℓ_5 in this series?

2) Points A(56, 54), B(8, 33) and C(56, 9) are the vertices of a triangle. Segment AH is an altitude of this triangle.

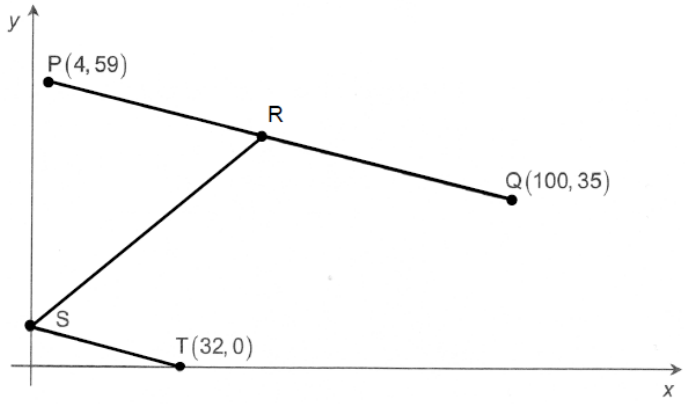
What is the area of triangle ABC? $A_\Delta = \frac{b \cdot h}{2}$



3) In the Cartesian plane below,

- $\overline{PQ} \parallel \overline{ST}$
- point R is located halfway between points P and Q
- the equation associated with line segment PQ is $y = -\frac{1}{4}x + 60$
- point S is on the y-axis

What is the length of line segment SR?



4) The equation of line ℓ in the Cartesian plane is $25x + 40y - 604 = 0$. What is the y-intercept of this line?

5) Point P (7, –23) is on line PV in the Cartesian plane. The slope of line PV is greater than 0.

Which of the following statements is true?

A) The x-intercept of line PV is less than zero, and its y-intercept is less than zero.

B) The x-intercept of line PV is less than zero, and its y-intercept is greater than zero.

C) The x-intercept of line PV is greater than zero, and its y-intercept is less than zero.

D) The x-intercept of line PV is greater than zero, and its y-intercept is greater than zero.