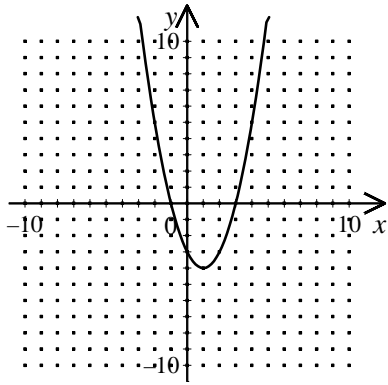


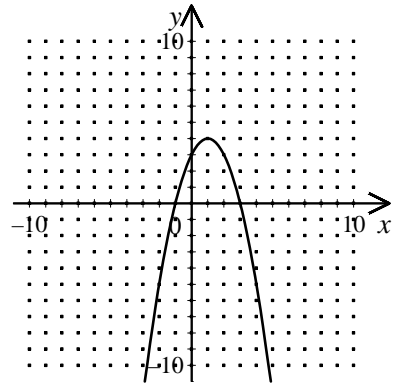
Scrap paper is available but write your final solution clearly in the space provided

1. Graph $y = (x+1)^2 - 4$.

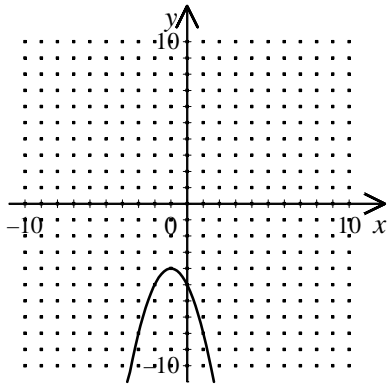
[A]



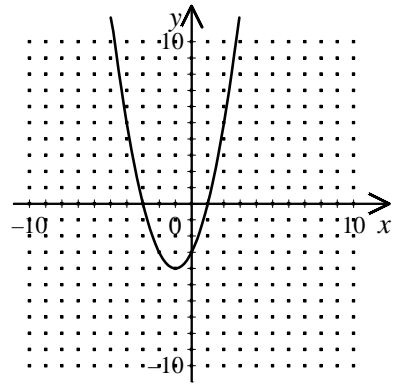
[B]



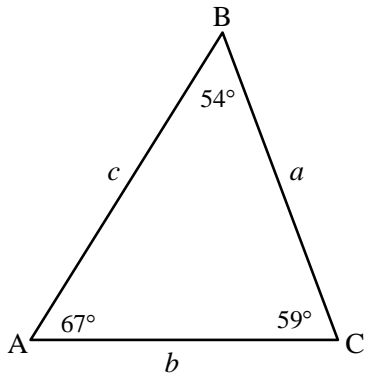
[C]



[D]

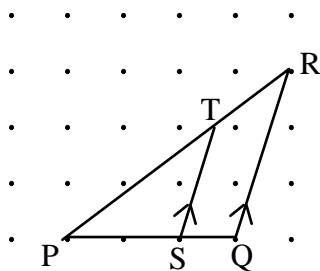


2. In the given triangle, name the longest side length. The triangle is not drawn to scale.



3. **Communication** $\triangle PQR$ and $\triangle PST$ are similar. Explain how to calculate each ratio.

- a) $\frac{PR}{PT}$ b) $\frac{ST}{QR}$ c) $\frac{\text{area of } \triangle PST}{\text{area of } \triangle PQR}$



4. Solve each system by elimination. If there is exactly one solution, check the solution. $2x - y = 4$

$$x + y = 5$$

[A] (10, 2)

[B] (0, -4)

[C] (2, 0)

[D] (3, 2)

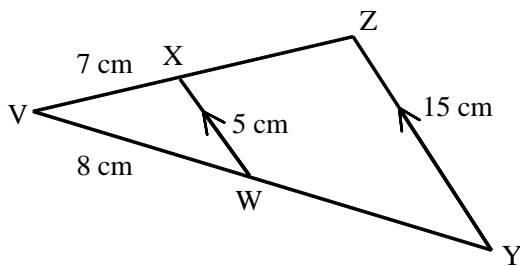
5. **Problem Solving** The area of a triangle is represented by the polynomial $x^2 + 3x - 18$. The base of the triangle is represented by $x + 6$.

a) Factor $x^2 + 3x - 18$.

b) Write a binomial that represents the altitude of the triangle.

c) Find the area of the triangle if $x = 12$.

6. $\triangle VWX \sim \triangle VYZ$. Find VY , WY , VZ , and XZ .



7. The diameter of a circle joins the points $C(0, 7)$ and $D(5, 1)$. What are the coordinates of the centre of the circle?

8. **Application** Write an equation for each function.

a)

x	y
0	1
1	4
2	7
3	10
4	13

b)

x	y
0	6
1	4
2	2
3	0
4	-2

c)

x	y
0	7
1	5
2	5
3	7
4	11

d)

x	y
0	2
1	7
2	22
3	47
4	82