

Triangles Practice

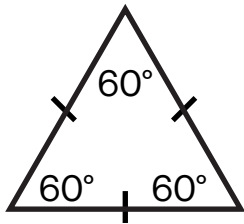
Name: _____

Date: _____

Question 1

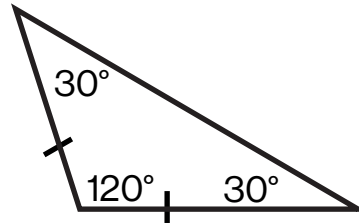
Classify the triangles based on their sides and angles

I.



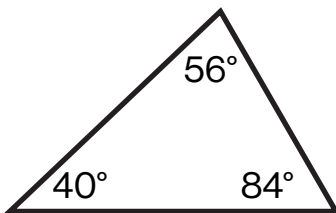
side classification :
angle classification :

II.



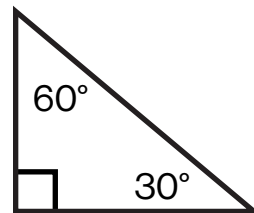
side classification :
angle classification :

III.



side classification :
angle classification :

IV.

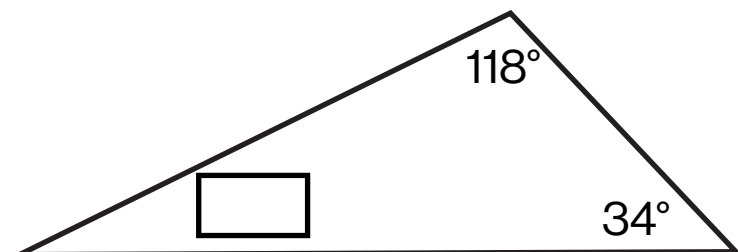


side classification :
angle classification :

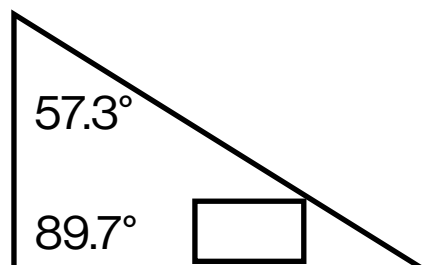
Question 2

Determine the unknown angle measurements

I.

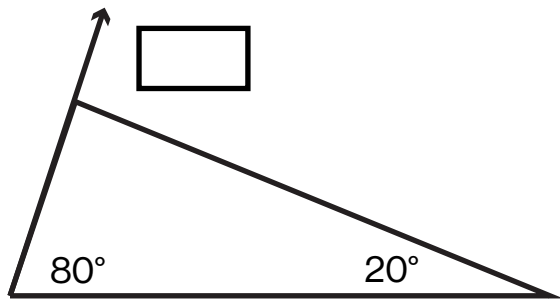


II.

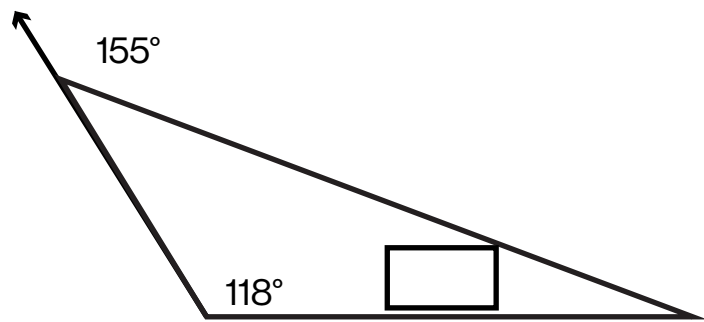


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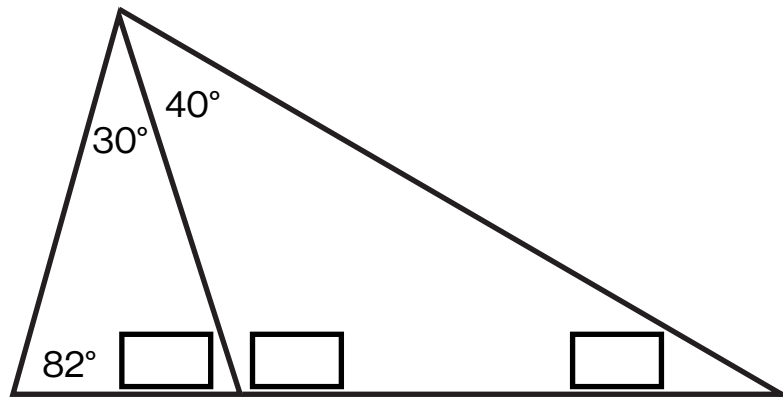
III.



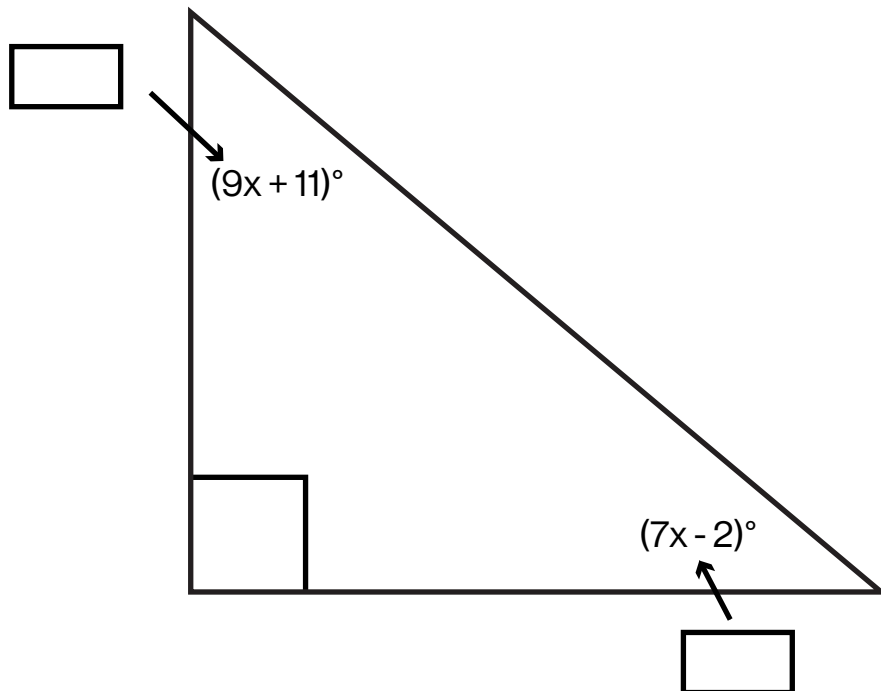
IV.



V.

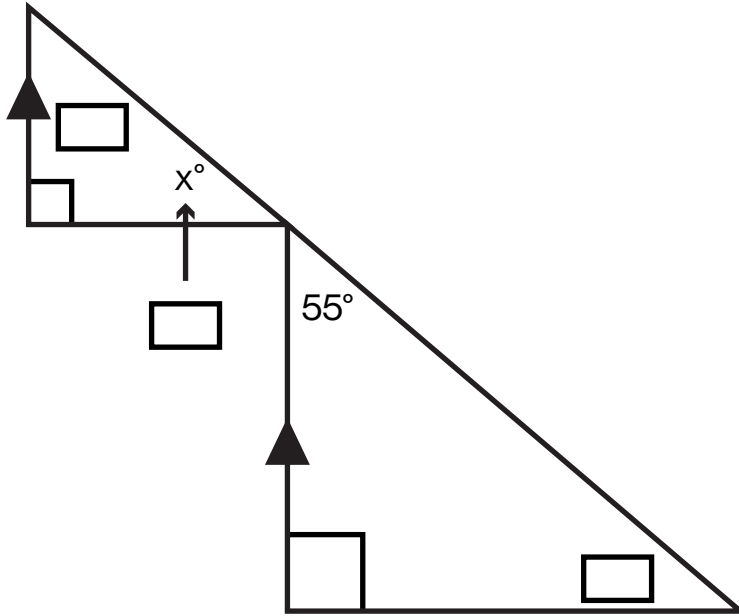


VI.

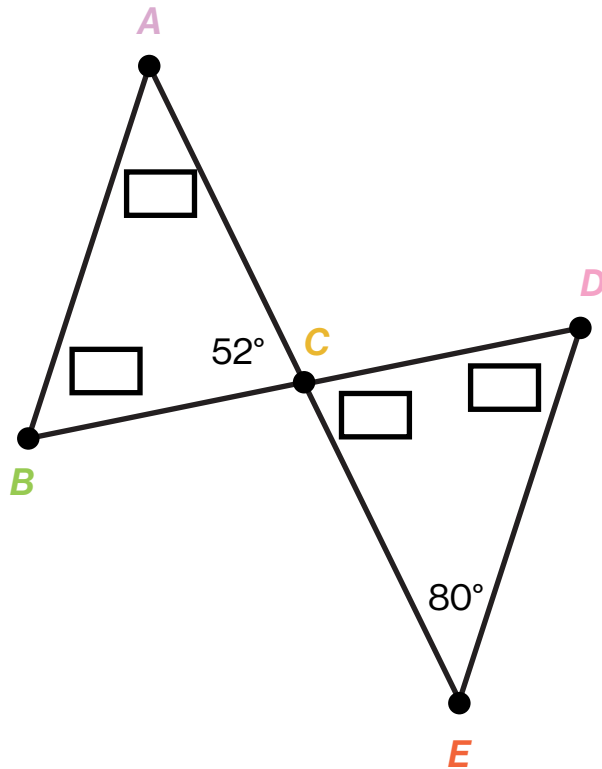


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VII.



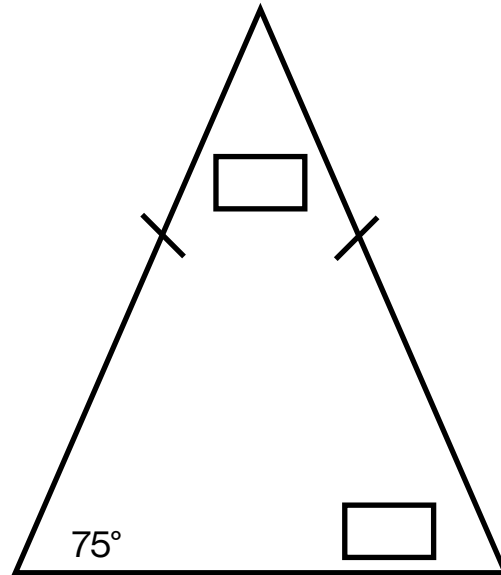
VIII.



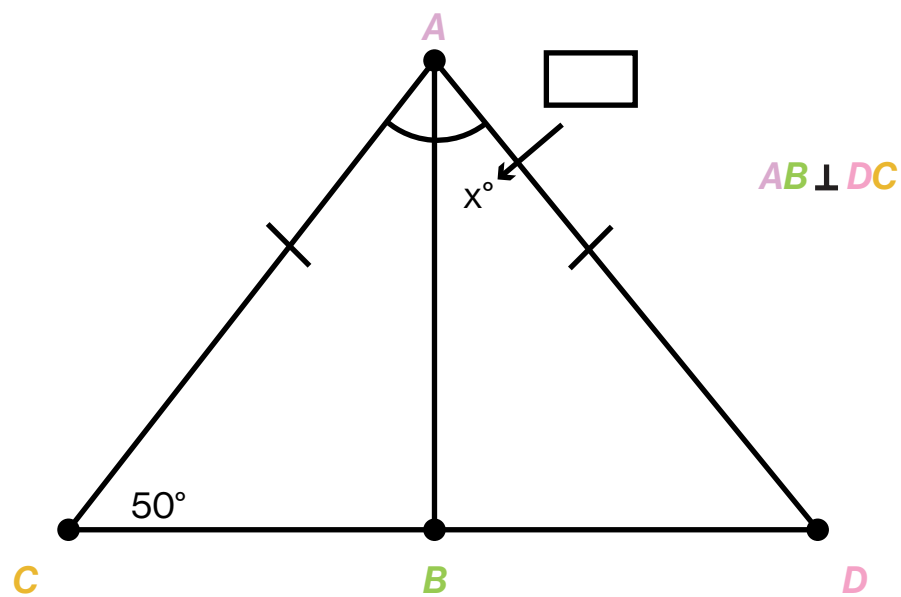
$$\triangle ABC \cong \triangle DCE$$

Triangles Practice

IX.



X.

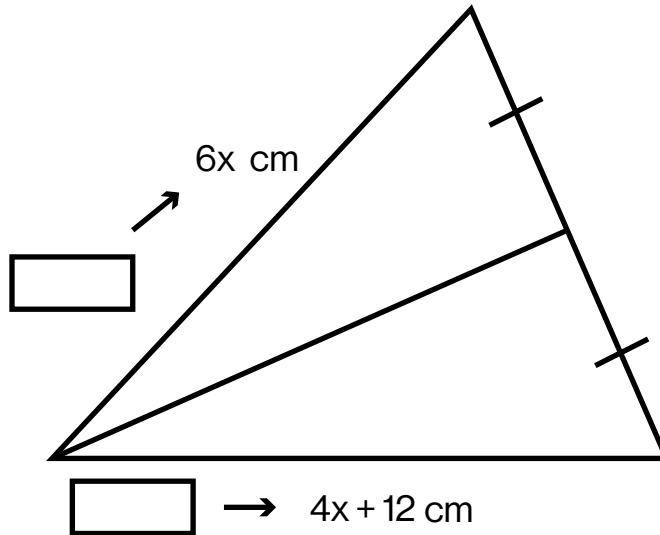


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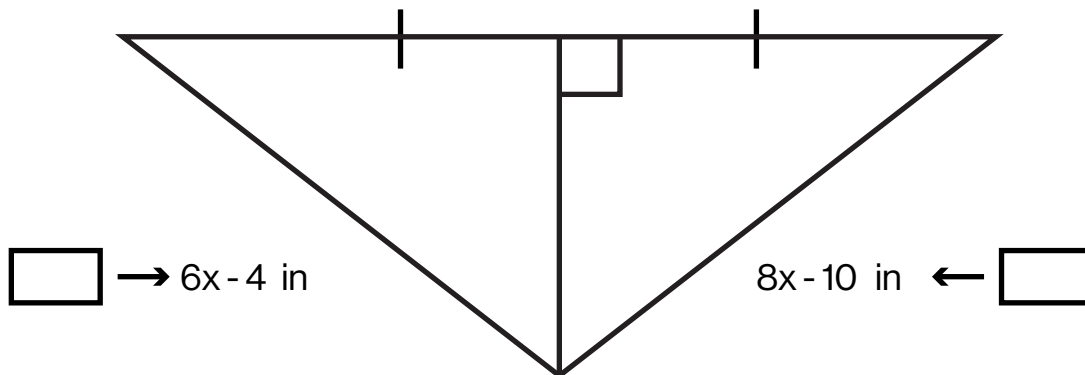
Question 3

Determine the unknown sides of the triangle

I.



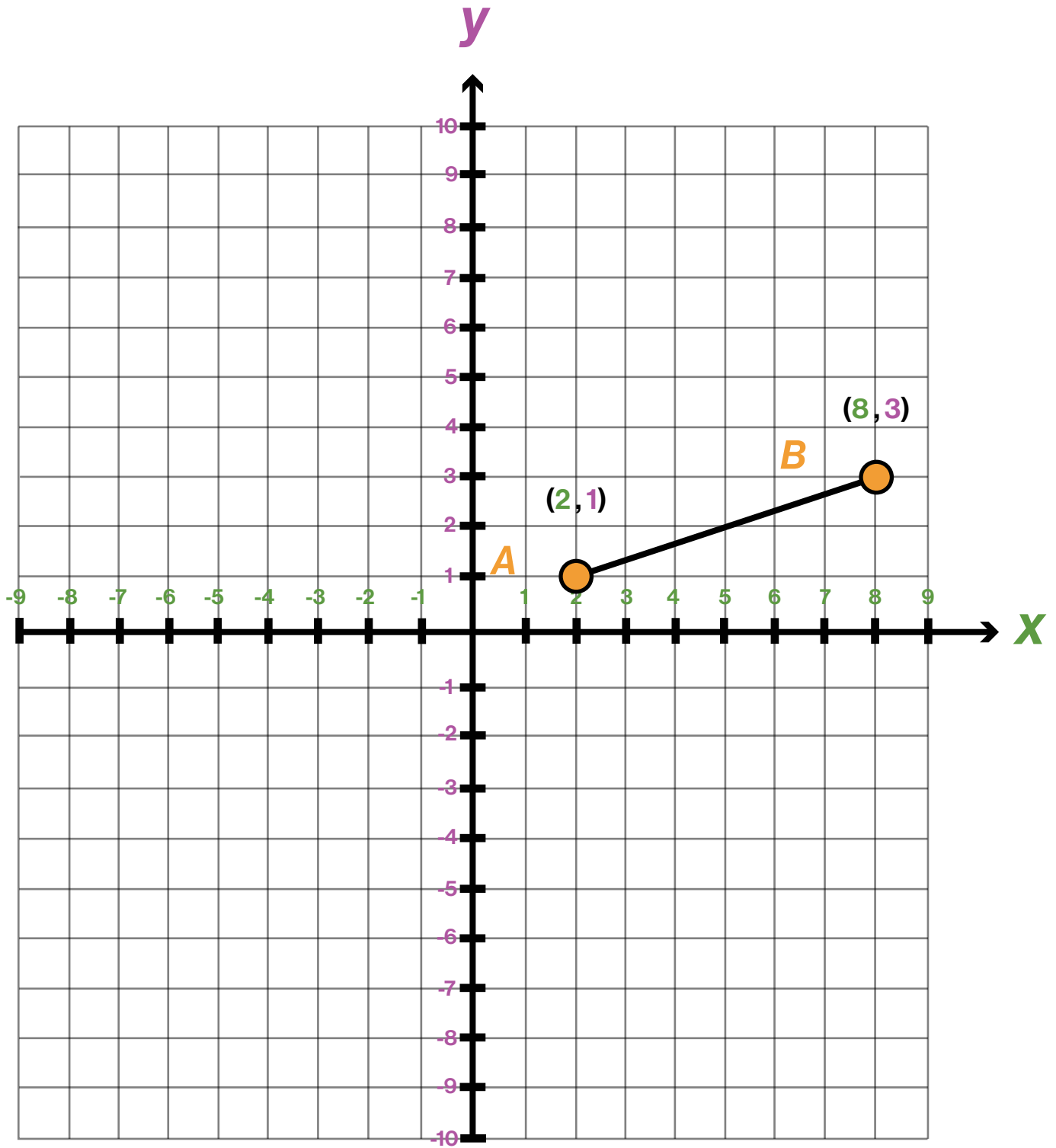
II.



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Question 4

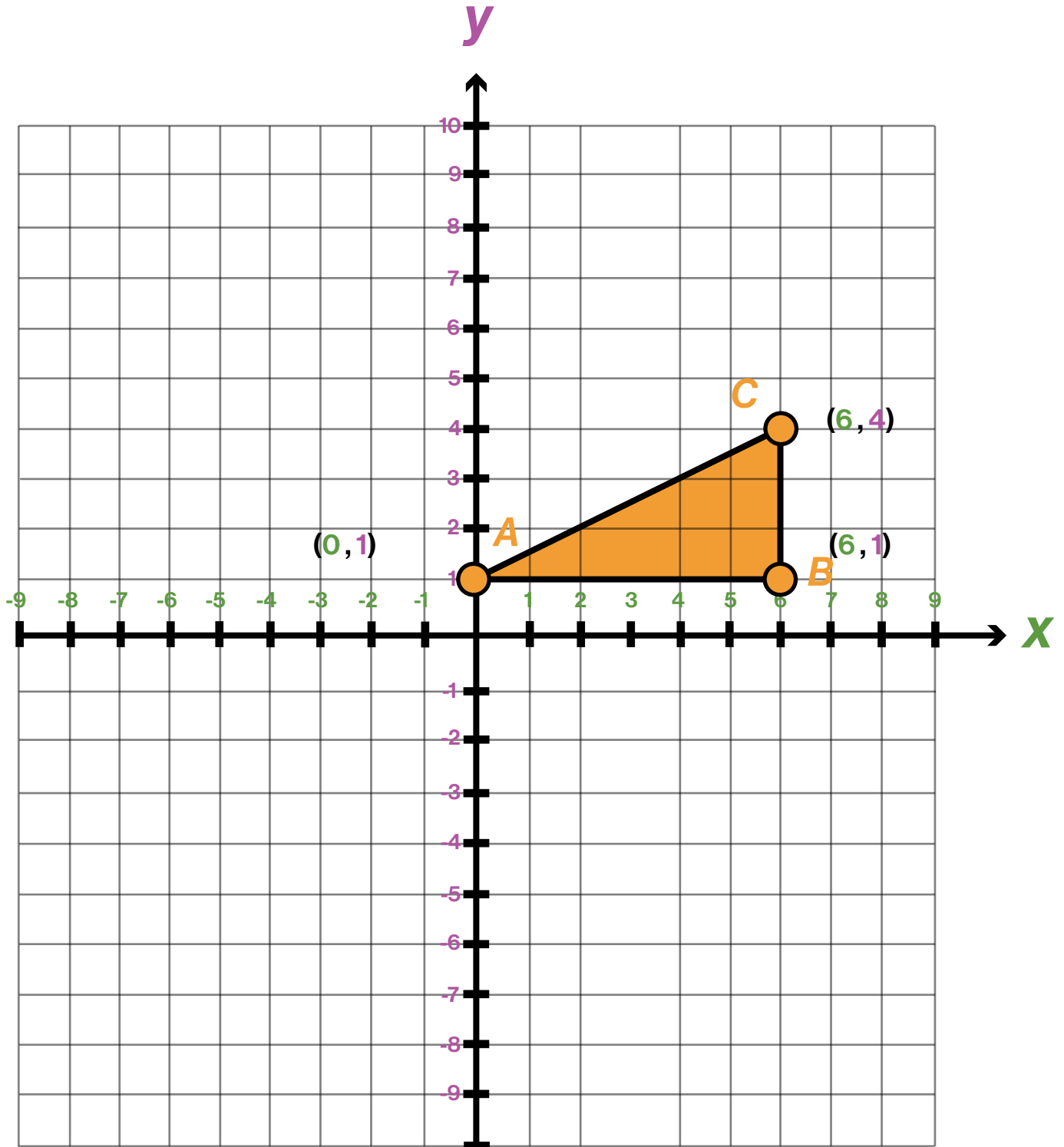
Find the perpendicular bisector of the segment



Triangles Practice

Question 5

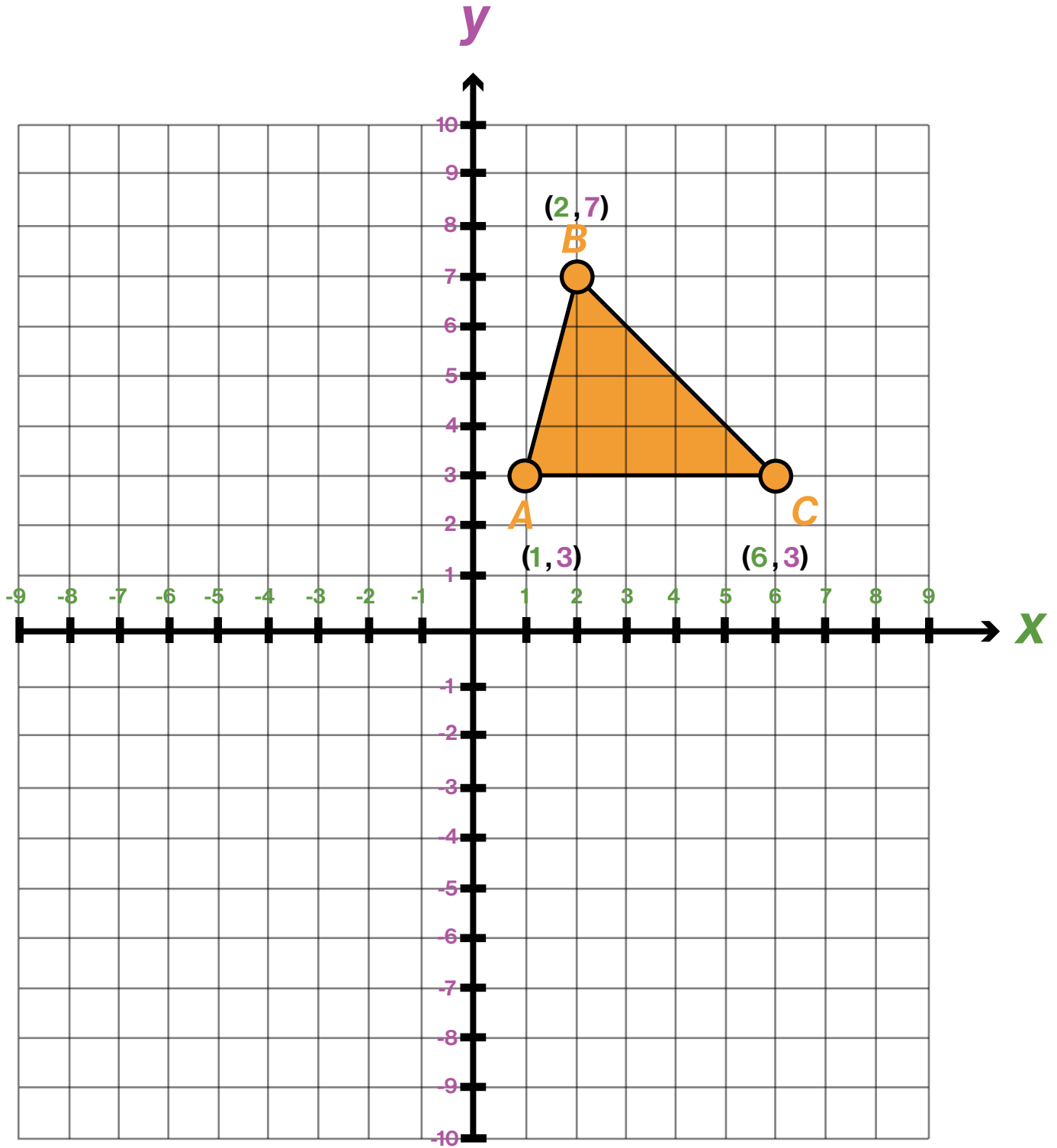
Find the circumcenter of the triangle



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Question 6

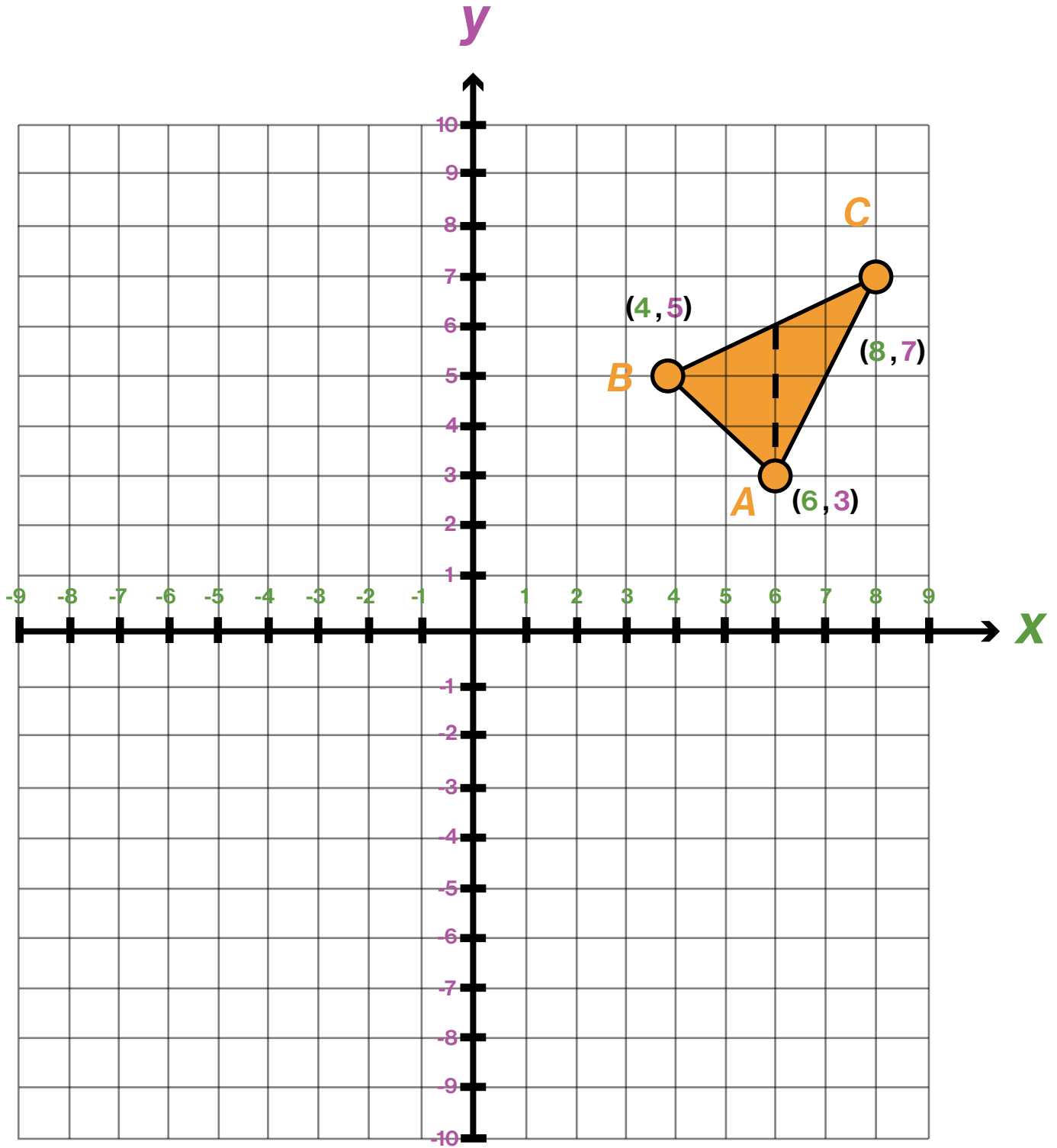
Find the orthocenter of the triangle



Triangles Practice

Question 7

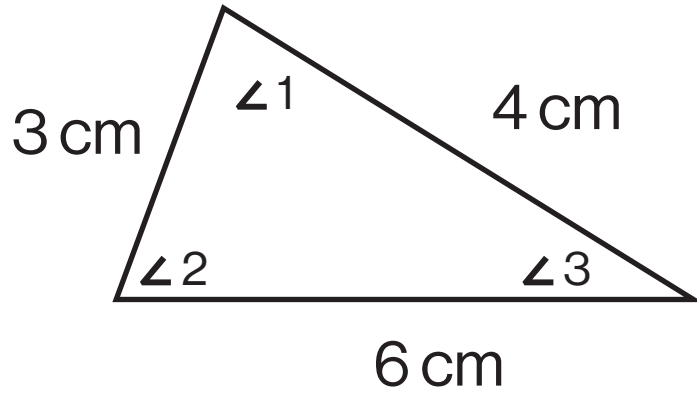
Find the centroid of the triangle



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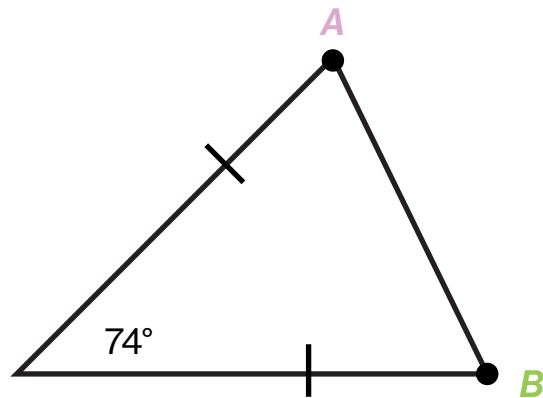
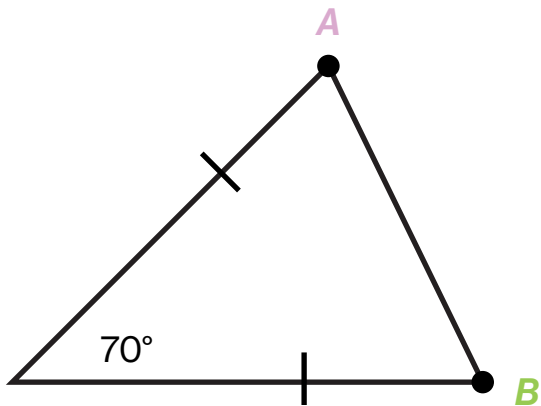
Question 8

Order the angles from largest to smallest



Question 9

Determine which triangle has the greater distance for $\overline{AB}$



Triangles Practice

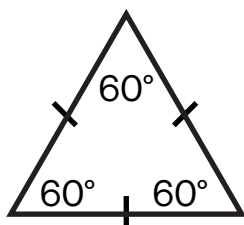
Name: _____ **Key** _____

Date: _____

Question 1

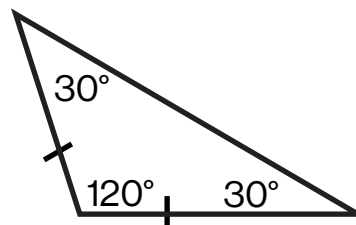
Classify the triangles based on their sides and angles

I.



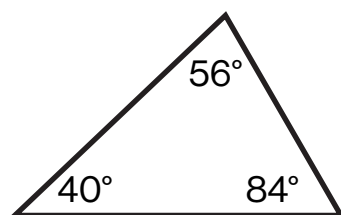
side classification : **equilateral**
angle classification : **equiangular**

II.



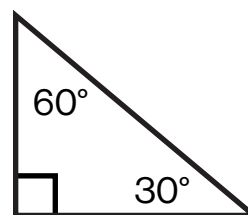
side classification : **isosceles**
angle classification : **obtuse**

III.



side classification : **scalene**
angle classification : **acute**

IV.

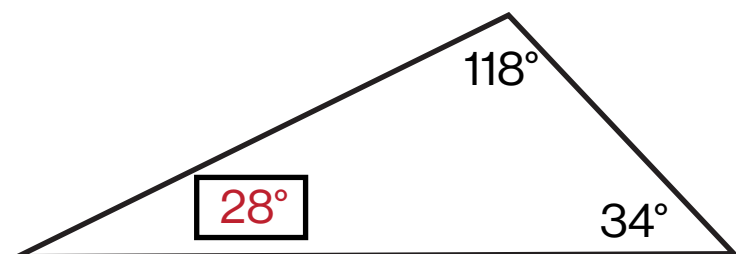


side classification : **scalene**
angle classification : **right**

Question 2

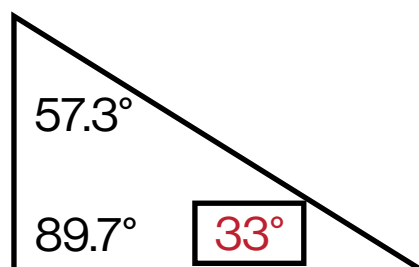
Determine the unknown angle measurements

I.



$$180^\circ - 118^\circ - 34^\circ = 28^\circ$$

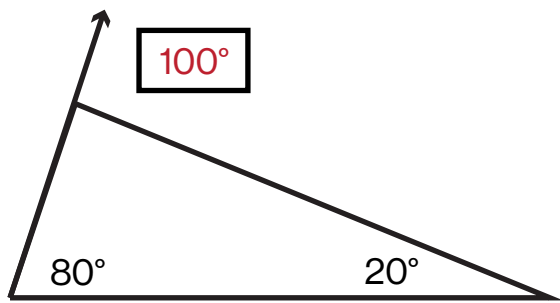
II.



$$180^\circ - 57.3^\circ - 89.7^\circ = 33^\circ$$

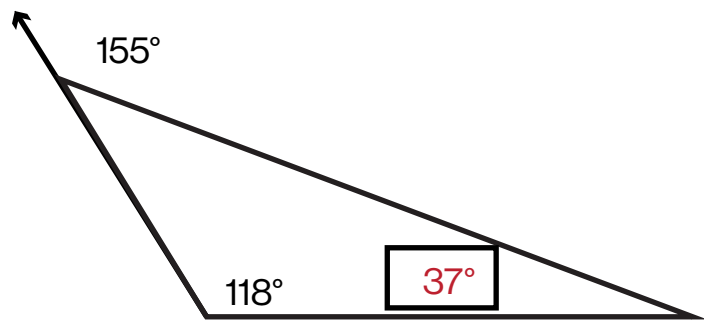
Triangles Practice

111.



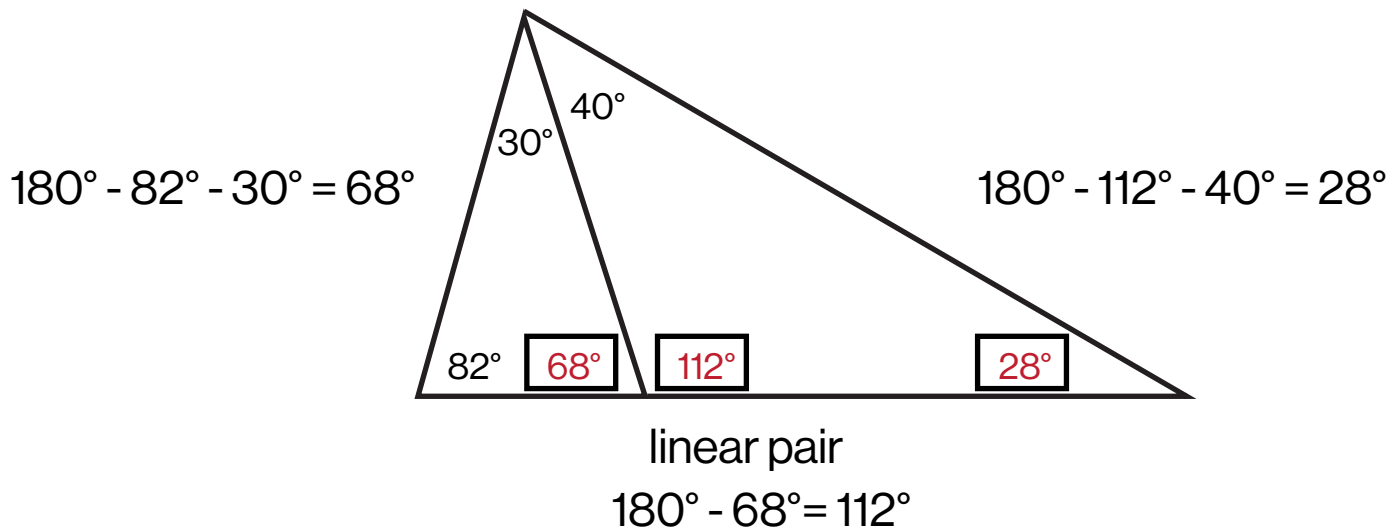
$$80^\circ + 20^\circ = 100^\circ$$

IV.



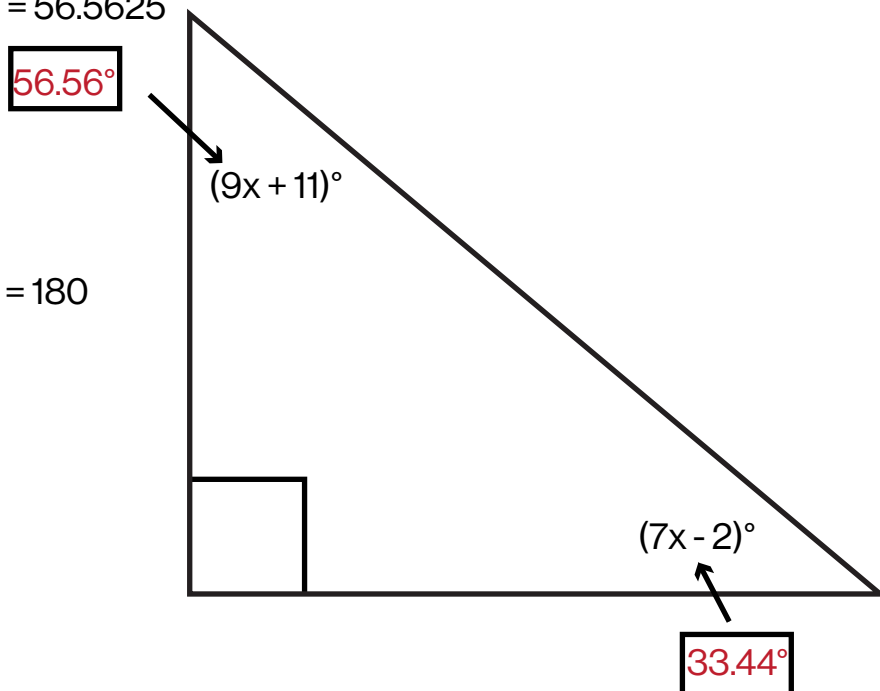
$$155^\circ - 118^\circ = 37^\circ$$

V.



VI.

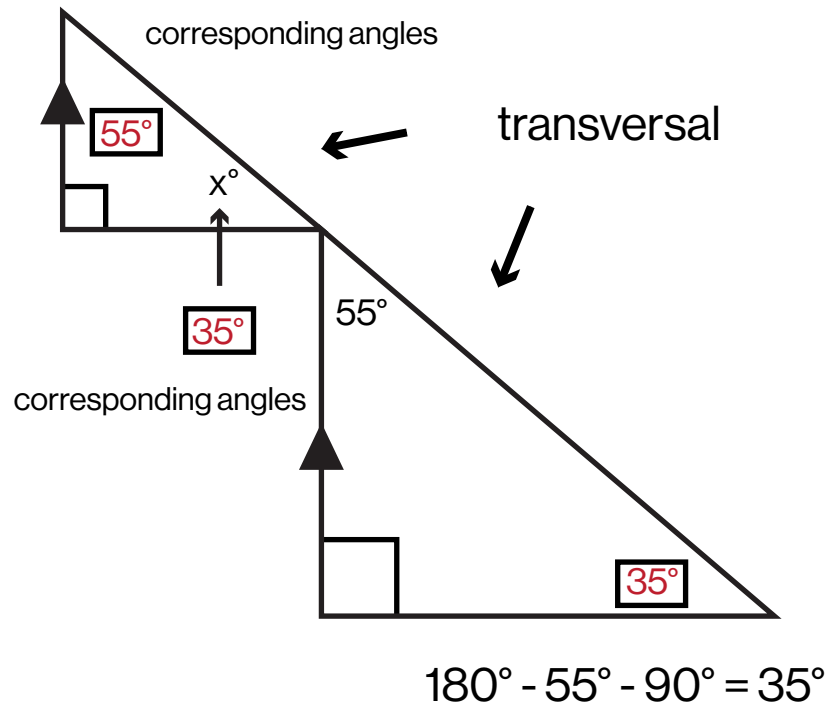
$$9(5.0625) + 11 = 56.5625$$



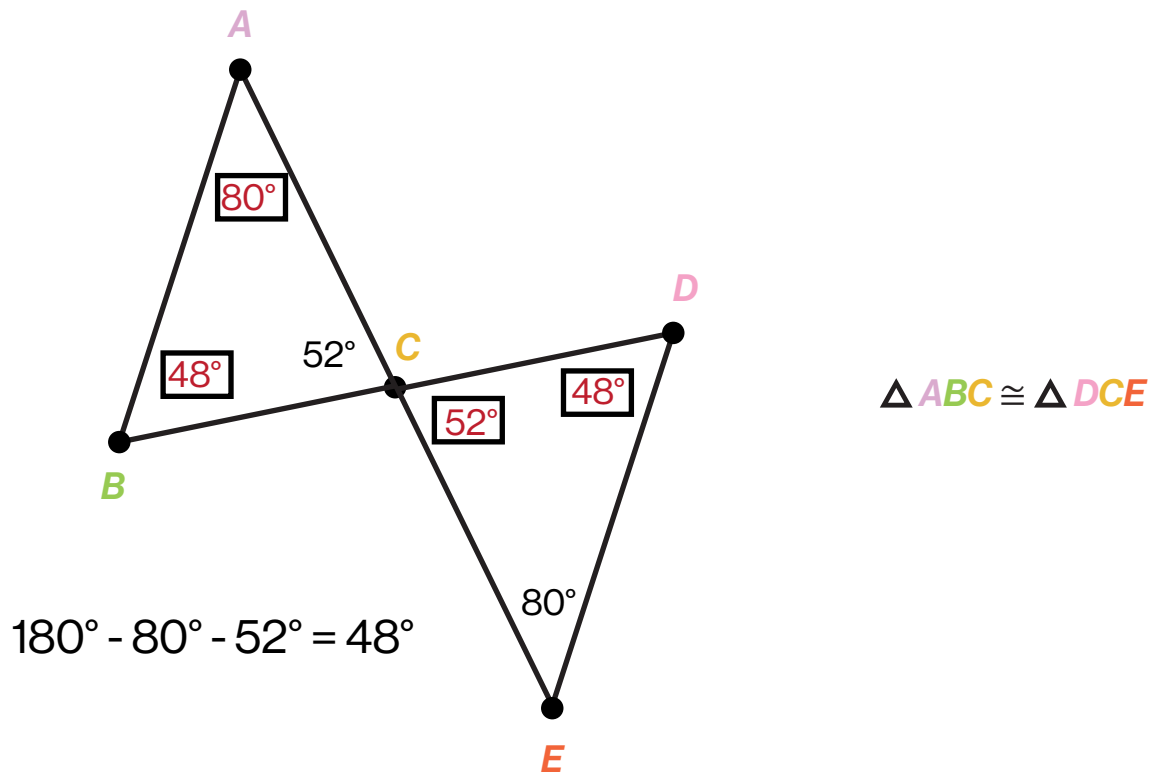
$$7(5.0625) - 2 = 33.4375$$

Triangles Practice

VII.



VIII.



IX.

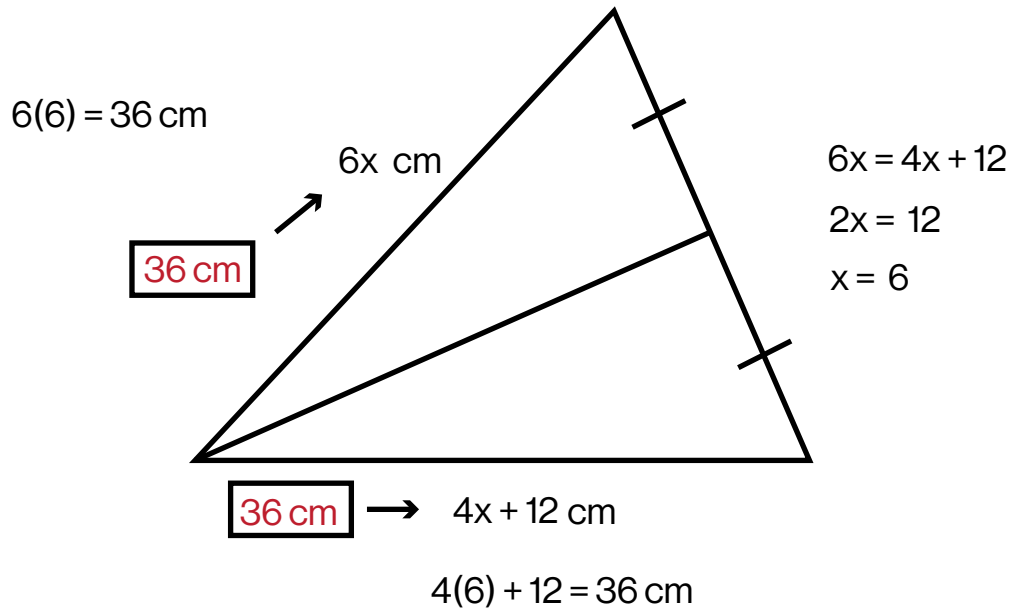


Triangles Practice

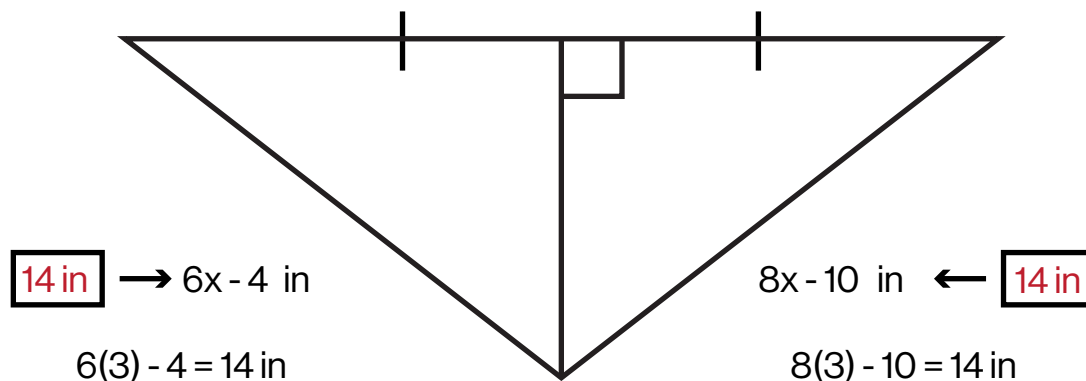
Question 3

Determine the unknown sides of the triangle

I.



II.

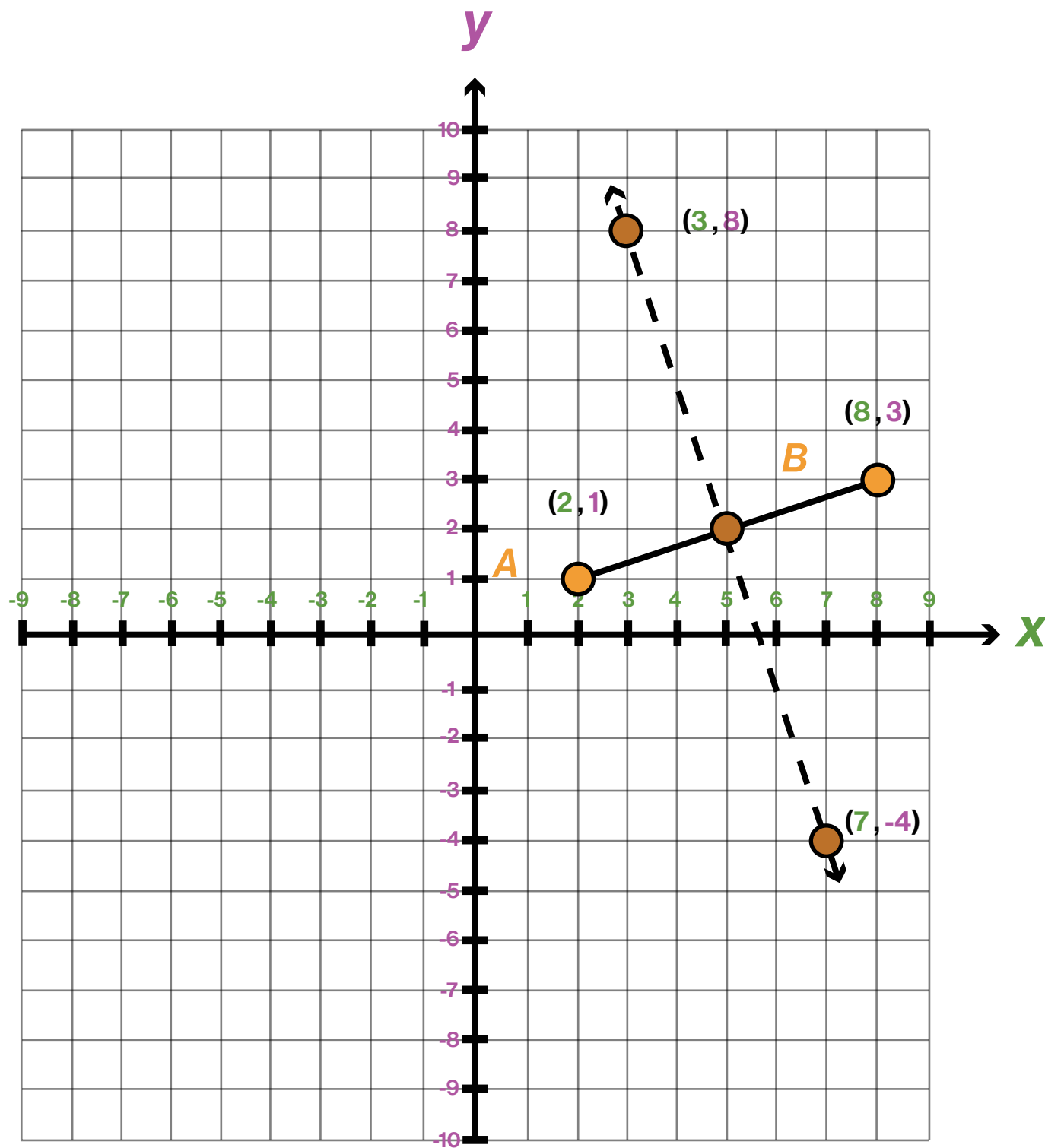


$$\begin{aligned} 6x - 4 &= 8x - 10 \\ -2x - 4 &= -10 \\ -2x &= -6 \\ x &= 3 \end{aligned}$$

Triangles Practice

Question 4

Find the perpendicular bisector of the segment



$$\overline{AB} \text{ Midpoint} = (5, 2)$$

$$(8 + 2) / 2 = 5$$

$$(3 + 1) / 2 = 2$$

$$\overline{AB} \text{ Slope} = 2 / 6$$

$$(3 - 1) / (8 - 2) = 2 / 6$$

$$\overline{AB} \perp \text{ Line Slope} = -6 / 2$$

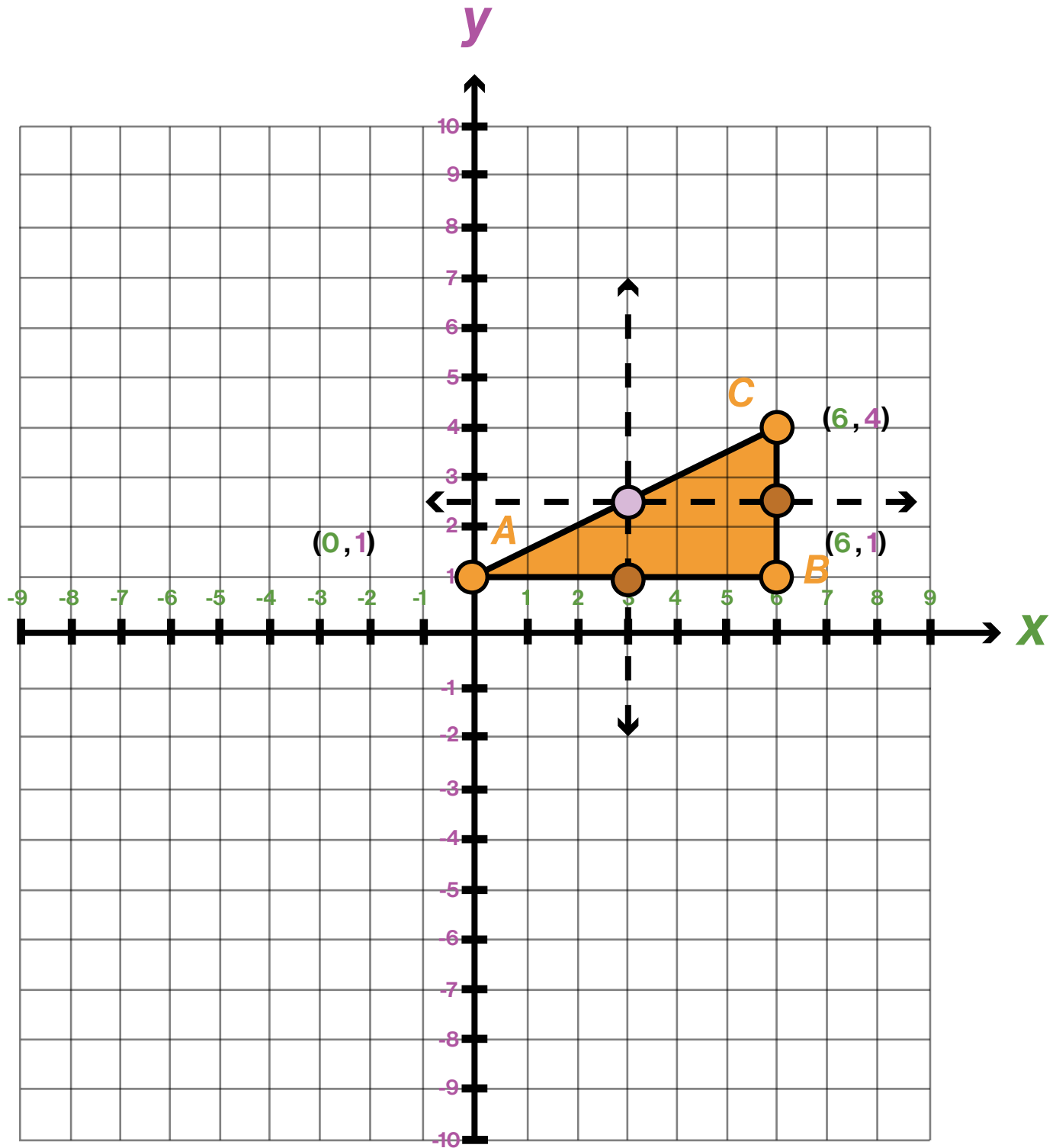
$$-1 / (2 / 6) = -6 / 2$$

Triangles Practice

Question 5

Find the circumcenter of the triangle

Circumcenter : $(3, 2.5)$



$$\begin{aligned}\overline{AB} \text{ Midpoint} &= (3, 1) \\ (6+0) / 2 &= 3 \\ (1+1) / 2 &= 1\end{aligned}$$

$$\begin{aligned}\overline{AB} \text{ Slope} &= 0 / 6 \\ (1-1) / (6-0) &= 0 / 6\end{aligned}$$

$$\begin{aligned}\overline{AB} \perp \text{ Line Slope} &= \text{undefined} \\ -1 / (0 / 6) &= \text{undefined} \\ \text{Vertical Line at } x &= 3\end{aligned}$$

$$\begin{aligned}\overline{BC} \text{ Midpoint} &= (6, 2.5) \\ (6+6) / 2 &= 6 \\ (4+1) / 2 &= 2.5\end{aligned}$$

$$\begin{aligned}\overline{BC} \text{ Slope} &= \text{undefined} \\ (4-1) / (6-6) &= 3 / 0\end{aligned}$$

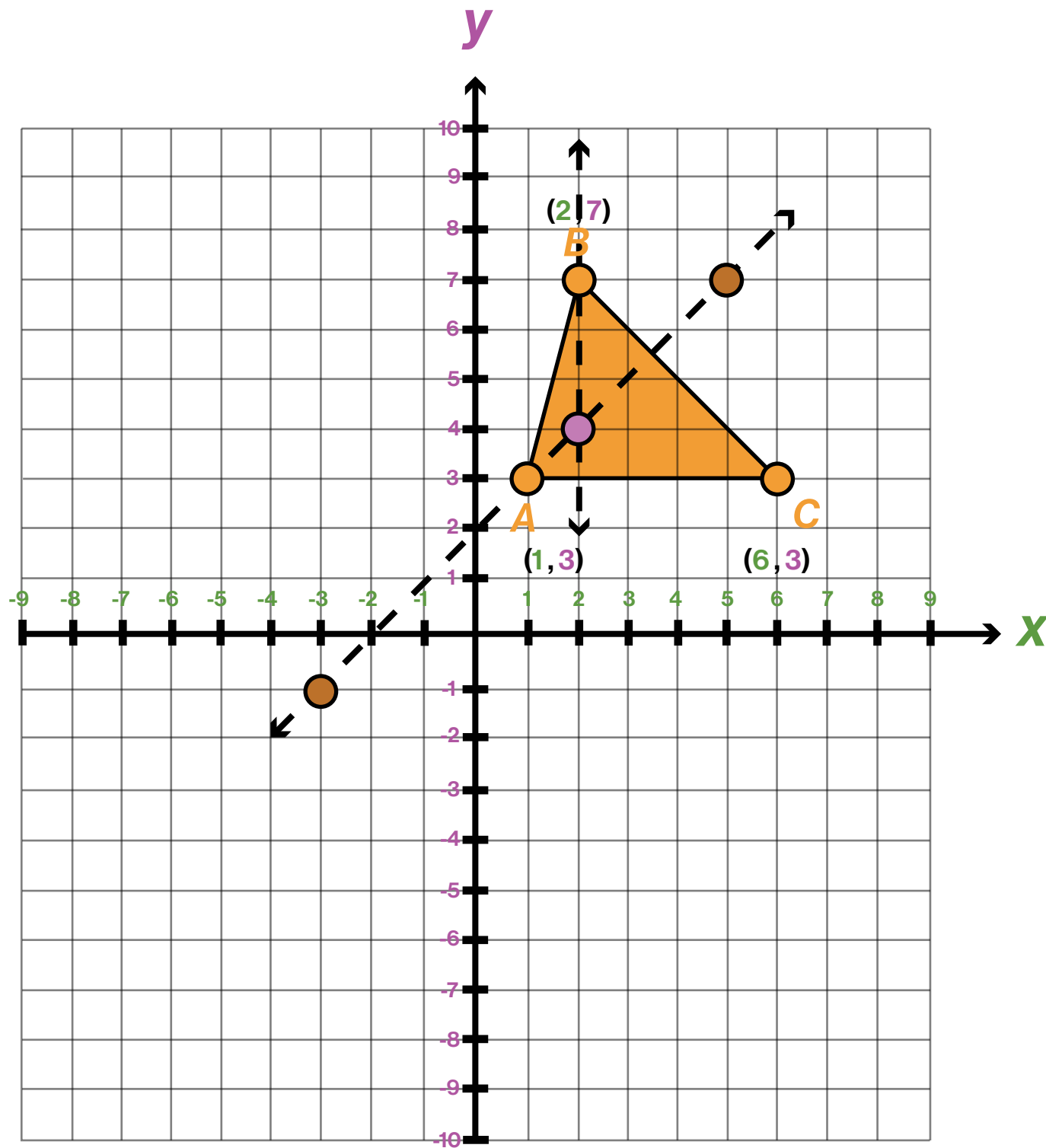
$$\begin{aligned}\overline{BC} \perp \text{ Line Slope} &= \text{Horizontal Line at } y = 2.5 \\ \text{Horizontal Line at } y &= 2.5\end{aligned}$$

Triangles Practice

Question 6

Find the orthocenter of the triangle

Orthocenter: $(2, 4)$



$\overline{AC}$ is horizontal so the line that passes through B is vertical

$$\overline{BC} \text{ Slope} = -4 / 4$$

$$(3 - 7) / (6 - 2) = -4 / 4$$

$$\overline{BC} \perp \text{Line Slope} = 4 / 4$$

$$-1 / (-4 / 4) = 4 / 4$$

Orthocenter $\begin{cases} x = 2 \\ y = x + 2 \end{cases} (2, 4)$

$$\overline{AC} \text{ Equation of the Line: } x = 2$$

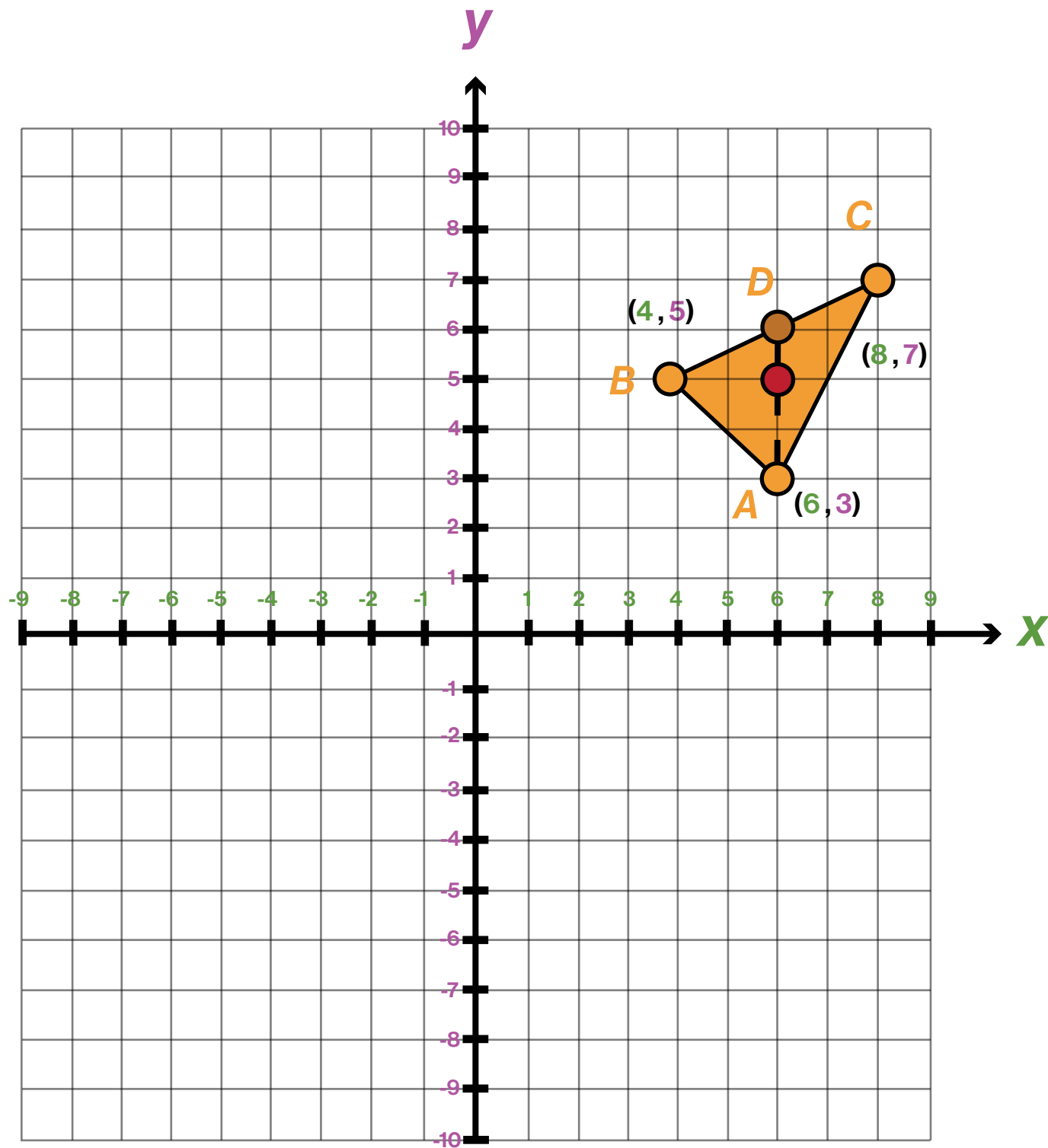
$$\overline{BC} \text{ Equation of the Line: } y - 3 = 4 / 4 (x - 1) \text{ OR } y = x + 2$$

Triangles Practice

Question 7

Find the centroid of the triangle

Centroid: $(6, 5)$



$\overline{BC}$ Midpoint = $(6, 6)$

$(8 + 4) / 2 = 6$

$(7 + 5) / 2 = 6$

$\overline{AD}$ Distance = $|6 - 3| = |3| = 3$

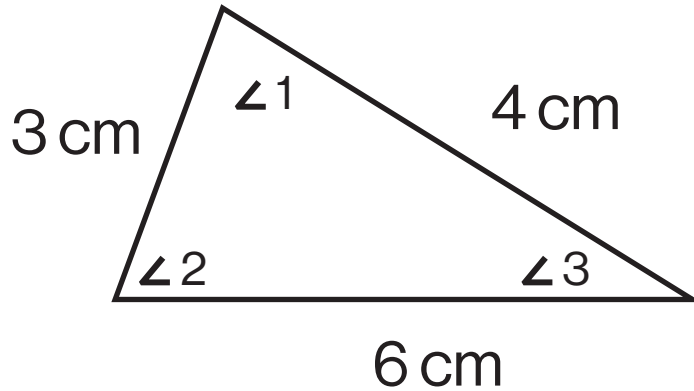
Centroid Distance From Vertex A = $3 \cdot (2/3) = 2$

Centroid: $(6, 3 + 2) = (6, 5)$

Triangles Practice

Question 8

Order the angles from largest to smallest



$$\angle 1 > \angle 2 > \angle 3$$

larger angles have longer opposite sides

Question 9

Determine which triangle has the greater distance for $\overline{AB}$

