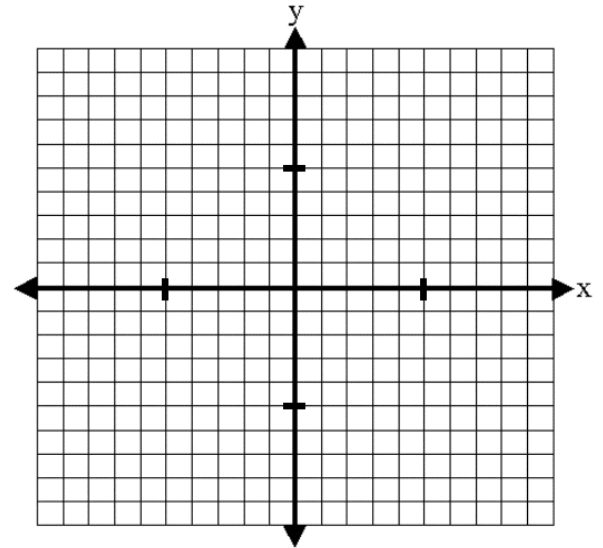


1. Graph points: $A(2, -3)$ $B(7, -9)$
2. Find the components of vector \overline{BA} :
3. What is $|\overline{BA}|$?
4. If $\vec{v} = \langle -1, -6 \rangle$, find $\overline{BA} + \vec{v}$ using the graph.
5. What is $|\overline{BA} + \vec{v}|$?
6. Show $\vec{u} \langle -8, -3 \rangle$ and $\vec{v} \langle -6, 16 \rangle$ are perpendicular. Explain why this is true.
9. A vector begins at $(-6, -2)$. The vector's movement is $\langle 5, -1 \rangle$. At what point does the vector end?
10. A vector ends at $(-2, 3)$. The vector's movement is $\langle -8, 3 \rangle$. Where does the vector begin?
11. Find \overline{DC} if $C(6, -2)$ and $D(-1, -4)$.



Let $\vec{w} = \langle -5, 3 \rangle$, $\vec{r} = \langle 4, 6 \rangle$, $\vec{s} = \langle -2, 0 \rangle$, and $\vec{v} = \langle 9, -3 \rangle$. Find each of the following:

12. $2\vec{w} - 3\vec{s}$

13. $\vec{r} + 3\vec{s}$

14. $\vec{v} + \vec{r} - \vec{w}$

15. Is $\vec{w} \perp \vec{r}$? Explain your reasoning.

16. If $\vec{r} - \vec{t} = \langle 7, 4 \rangle$ find \vec{t} .

Draw a picture and solve each triangle. Identify each triangle as ASA, SAS, SSS, SSA, AAS, or right. Round to the nearest hundredth.

17. $c = 400, B = 143^\circ, C = 8^\circ$,

18. $a = 7, c = 5, A = 25^\circ$

19. $a = 5, b = 7, A = 25^\circ$

20. $a = 18, b = 10, c = 9$

21. $a = 2000, c = 1700, B = 142^\circ$

22. $b = 5, c = 7, B = 126$

23. Hank and his friends are camping in a tent. Each side of the tent forms a right angle with the ground. The tops of two ropes are attached to each side of the tent 8 feet above the ground. The other ends of the two ropes are attached to stakes on the ground.

- a. If the rope is 12 feet long, what angle does it make with the level ground?

- b. What is the distance between the bottom of the tent and each stake?

24. In baseball, dead center field is the farthest point in the outfield on the straight line through home plate and second base. The distance between consecutive bases is 90 feet. In Wrigley Field in Chicago, dead center field is 400 feet from home plate. How far is dead center from first base?

25. An air taxi flies due east at 95 mph and the wind is blowing due south at 5 mph. Find the taxi's resultant velocity and direction.

26. A force acts on an object 25° north of west with a force of 35 units. Another force then acts on the object 48° north of east with a force of 80 units. Find the magnitude and direction of the resultant.