

Exercises with Vectors in the x|y plane (express all answers in polar form):**1. Vector Addition:**

a) $37\angle 12^\circ + 84\angle 77^\circ =$

b) $44\angle 177^\circ + 91\angle 79^\circ =$

c) $88\angle 175^\circ + 88\angle 280^\circ =$

d) $365\angle 260^\circ + 256\angle 12^\circ =$

2. Find the negative of these vector.

a) $37\angle 12^\circ$

b) $44\angle 177^\circ$

c) $88\angle 175^\circ$

d) $365\angle 260^\circ$

3. Find two vectors with the same magnitude as these vectors, and perpendicular to them.

a) $84\angle 77^\circ$

b) $91\angle 79^\circ$

c) $88\angle 280^\circ$

d) $256\angle 12^\circ$

4. Find a vector which adds to cancel each of these vectors

a) $84\angle 77^\circ$

b) $91\angle 79^\circ$

c) $88\angle 280^\circ$

d) $256\angle 12^\circ$

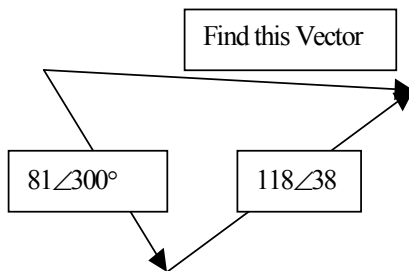
5. Calculate the differences between the vectors listed here.
(Add the first vector to the negative of the second vector.)

- a) $(37\angle 12^\circ) - (84\angle 77^\circ) =$
- b) $(44\angle 177^\circ) - (91\angle 79^\circ) =$
- c) $(88\angle 175^\circ) - (88\angle 280^\circ) =$
- d) $(365\angle 260^\circ) - (256\angle 12^\circ) =$

6. Complete the following vector triangles

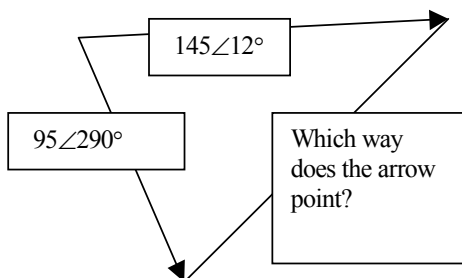
a) Two Vector Addition

$$81\angle 300^\circ + 188\angle 38^\circ =$$



b) Two Vector Subtraction

$$(145\angle 12^\circ) - (95\angle 290^\circ) =$$



c) Three Vectors Adding up to Zero

$$(91 \angle 200^\circ) + (91 \angle -30^\circ) + (M \angle \theta) = 0$$

