

How to Find the Resultant Graphically

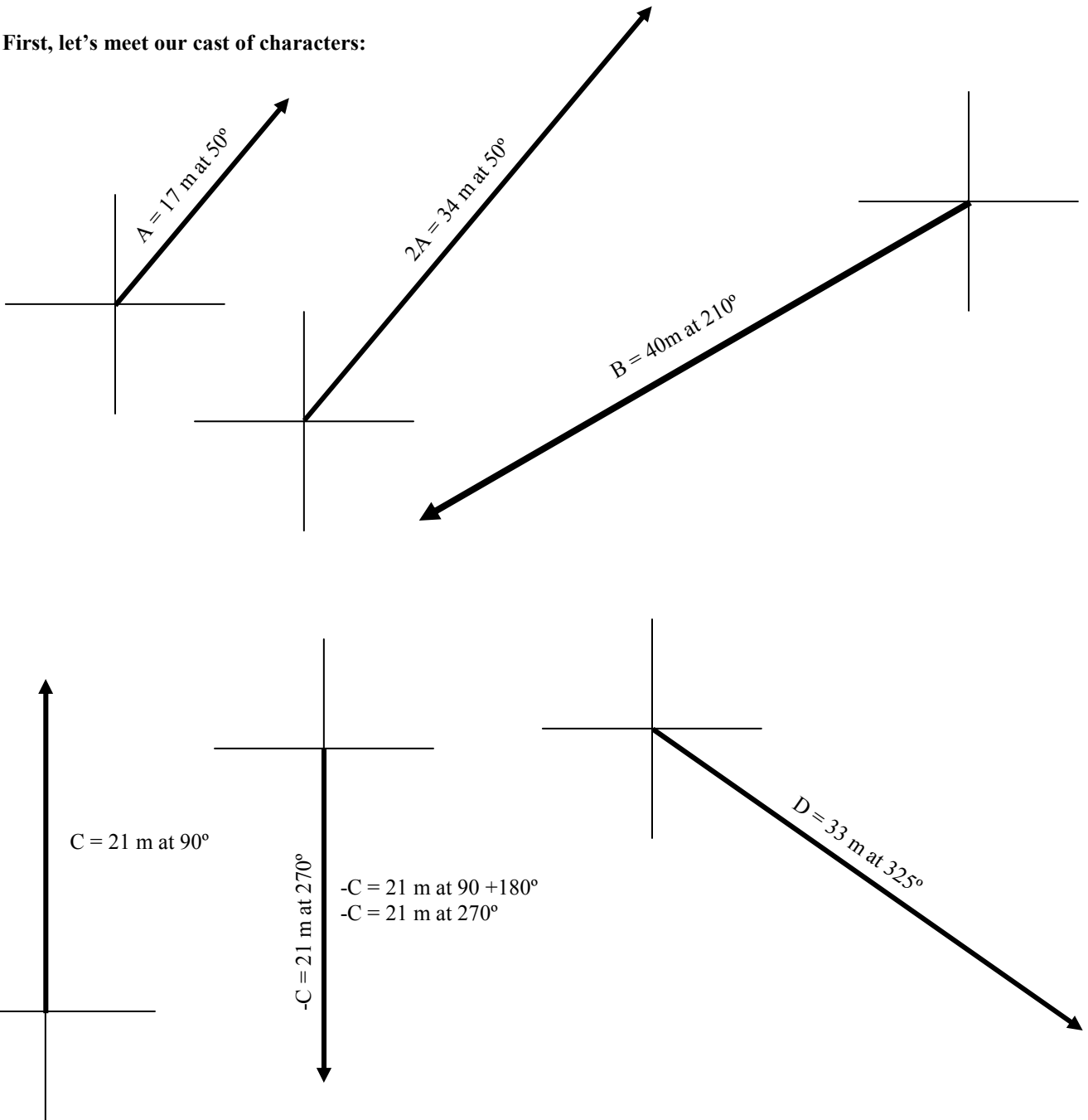
Given Vectors
 A = 17 m at 50°
 B = 40 m at 210°
 C = 21 m at 90°
 D = 33 m at 325°

I don't have time to do this "fancy", but if you look at this closely you should be able to duplicate it. It's actually quite simple.

The crosshairs represent a compass's x and y axis. Notice it ALWAYS starts at the starting point of each vector. This is where YOUR COMPASS should start to draw each vector.

Find the resultant of: 2A + B - C + D

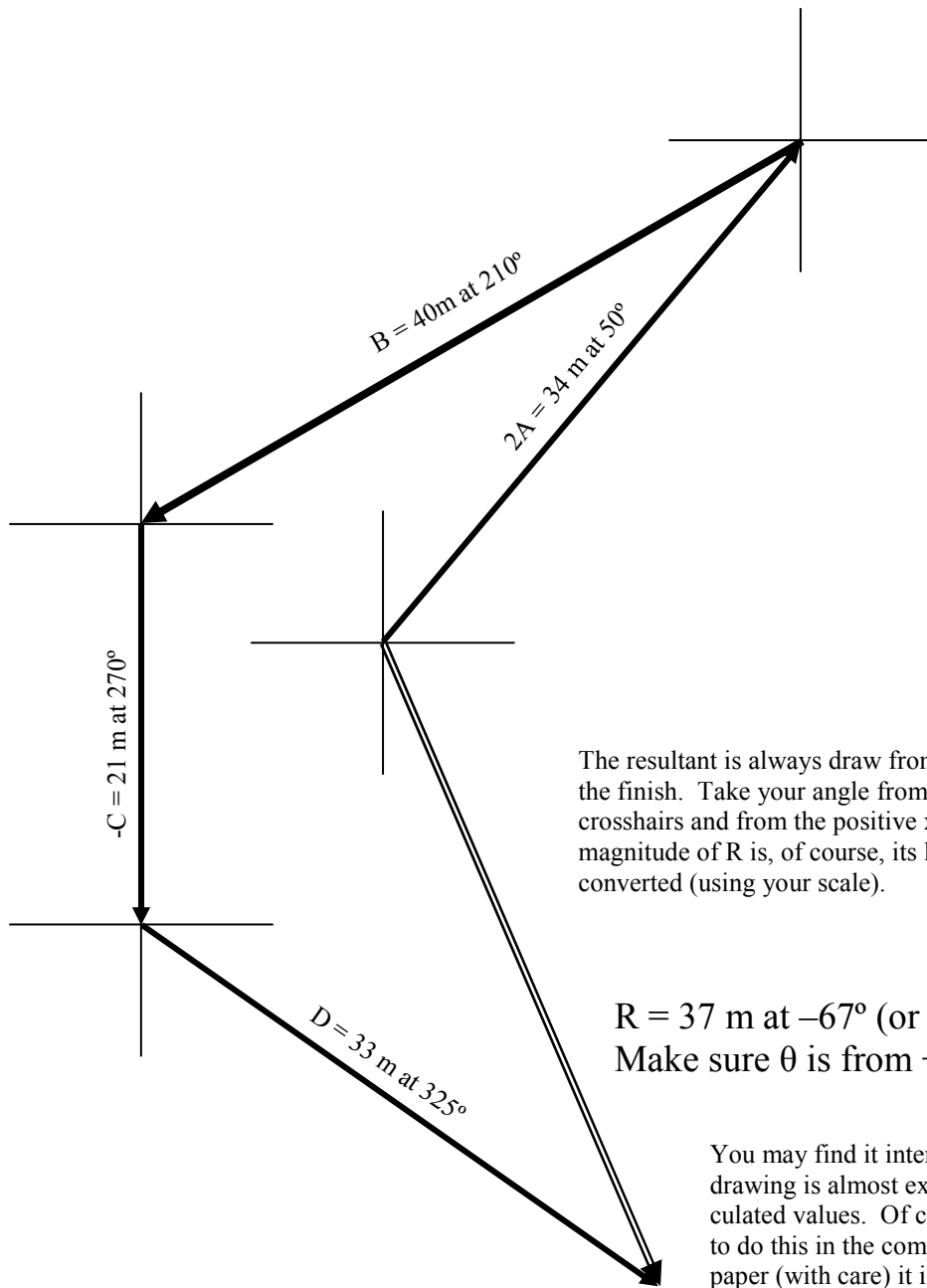
First, let's meet our cast of characters:



Next page: The Main Event!!!

To be sure you don't run off the page, I would first do a "rough" sketch of vector addition, then you will know where to start on the page (top, bottom, left, etc).

Notice that the compass is placed at the end of each vector to draw the next vector. Obviously, I don't show a ruler, which I ASSUME you know how to use. On this page I use a scale of .1 in = 1 m, so 17m = 1.7 in (the program is in inches). You should choose an easy scale so you don't confuse yourself.



The resultant is always draw from the start to the finish. Take your angle from the first crosshairs and from the positive x-axis. The magnitude of R is, of course, its length, once converted (using your scale).

R = 37 m at -67° (or 293°)
Make sure θ is from +x axis!

You may find it interesting that my drawing is almost exact with the calculated values. Of course, it is easier to do this in the computer, but on paper (with care) it is usually very close. On the test you can be off by 5%. That's quite a bit!!!

Don't freak out; do what you know. You'll be fine.