

Graphically Adding Vectors

Step 1: Set up the vectors by multiplying (like $2B$) and adding 180° to any negative vectors.

$$\begin{array}{ll} A = 2.8 \text{ cm at } 270^\circ & C = 5.25 \text{ cm at } 135^\circ \\ B = 5 \text{ cm at } 30^\circ & D = 1.6 \text{ cm at } 29.5^\circ \end{array}$$

Reference points for each step given at the bottom of the page. Graphical key on the next page.

Graph: $2B - 2A + C - 4D$ Starting at j9
(the set up of the vectors is at bottom of this page)

Example 1: Vector Setup:

$$\begin{array}{l} 2B = 2(5) = 10 \text{ cm at } 30^\circ \\ -2A = 2(2.8) \text{ at } 270^\circ - 180^\circ = 5.6 \text{ cm at } 90^\circ \\ C = 5.25 \text{ cm at } 135^\circ \\ -4D = 4(1.6) \text{ at } 29.5^\circ + 180^\circ = 6.4 \text{ at } 209.5^\circ \end{array}$$

Step 2: Find the starting point on the graph paper grid.

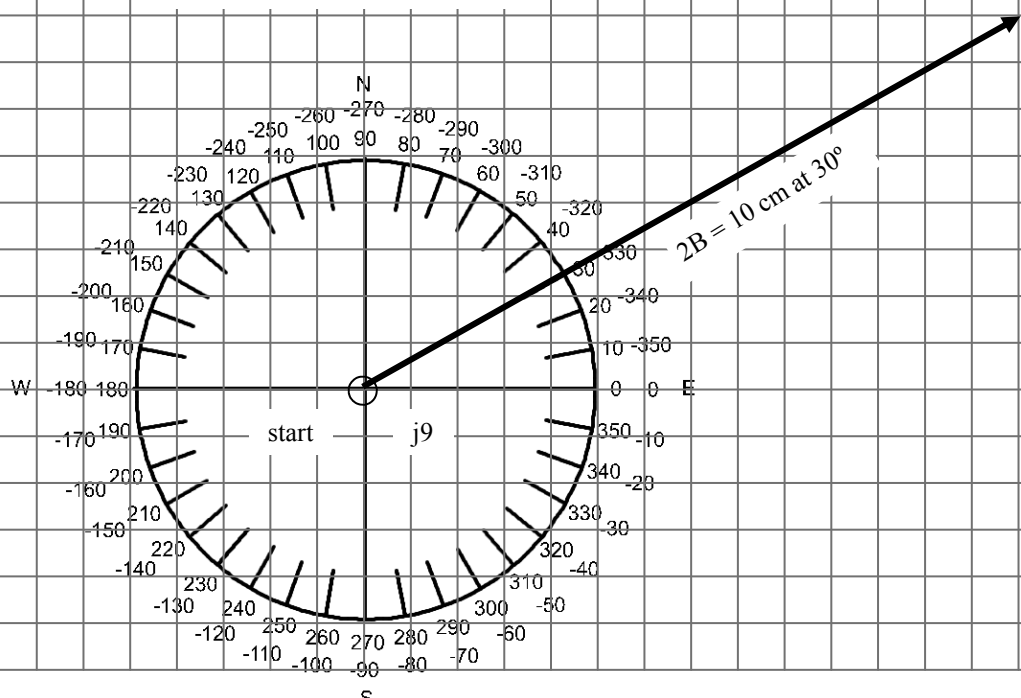
Step 3: Graph each vector. Start the second vector at the end of the first vector.

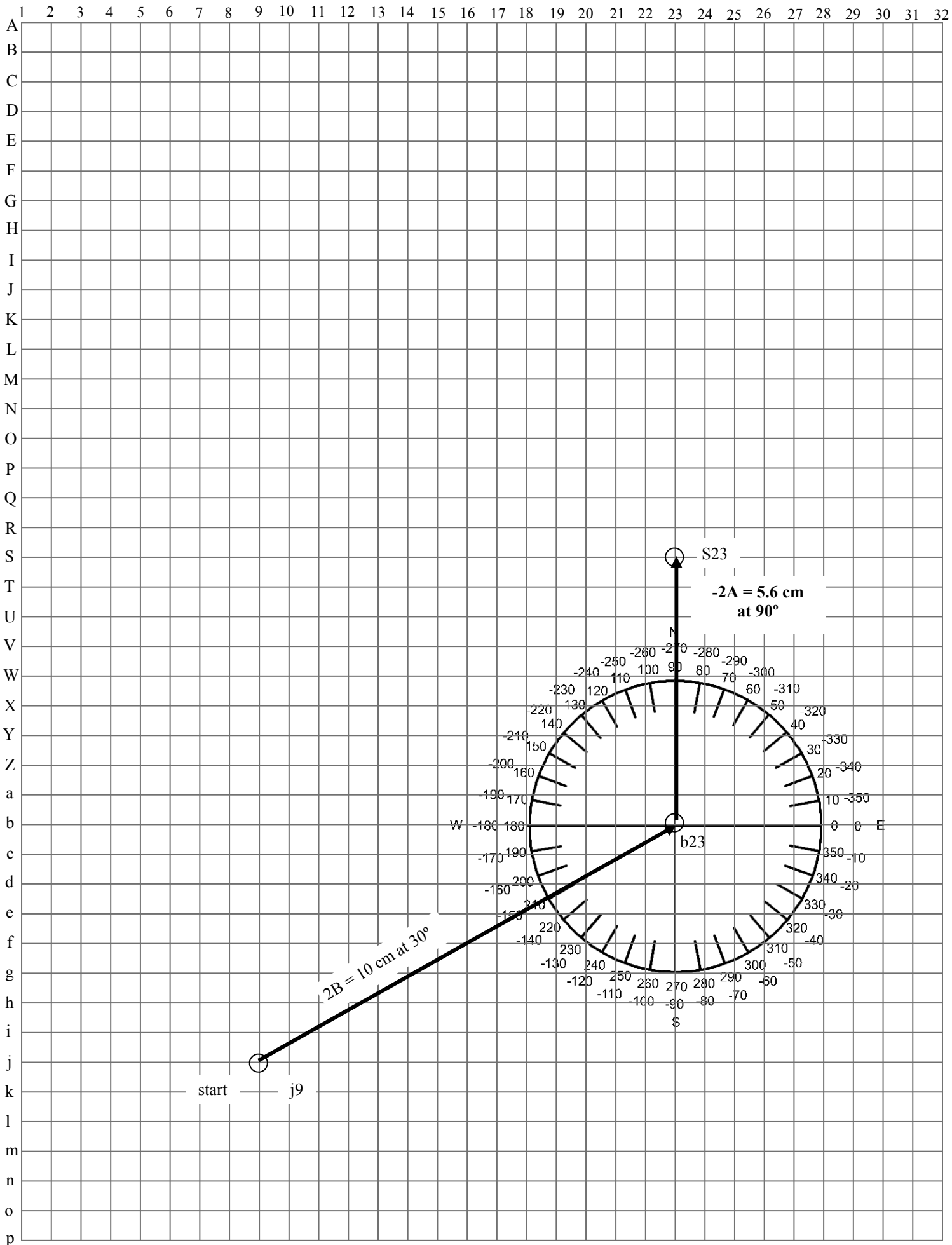
Step 4: Check yourself with the keys on p. 3 and 4.

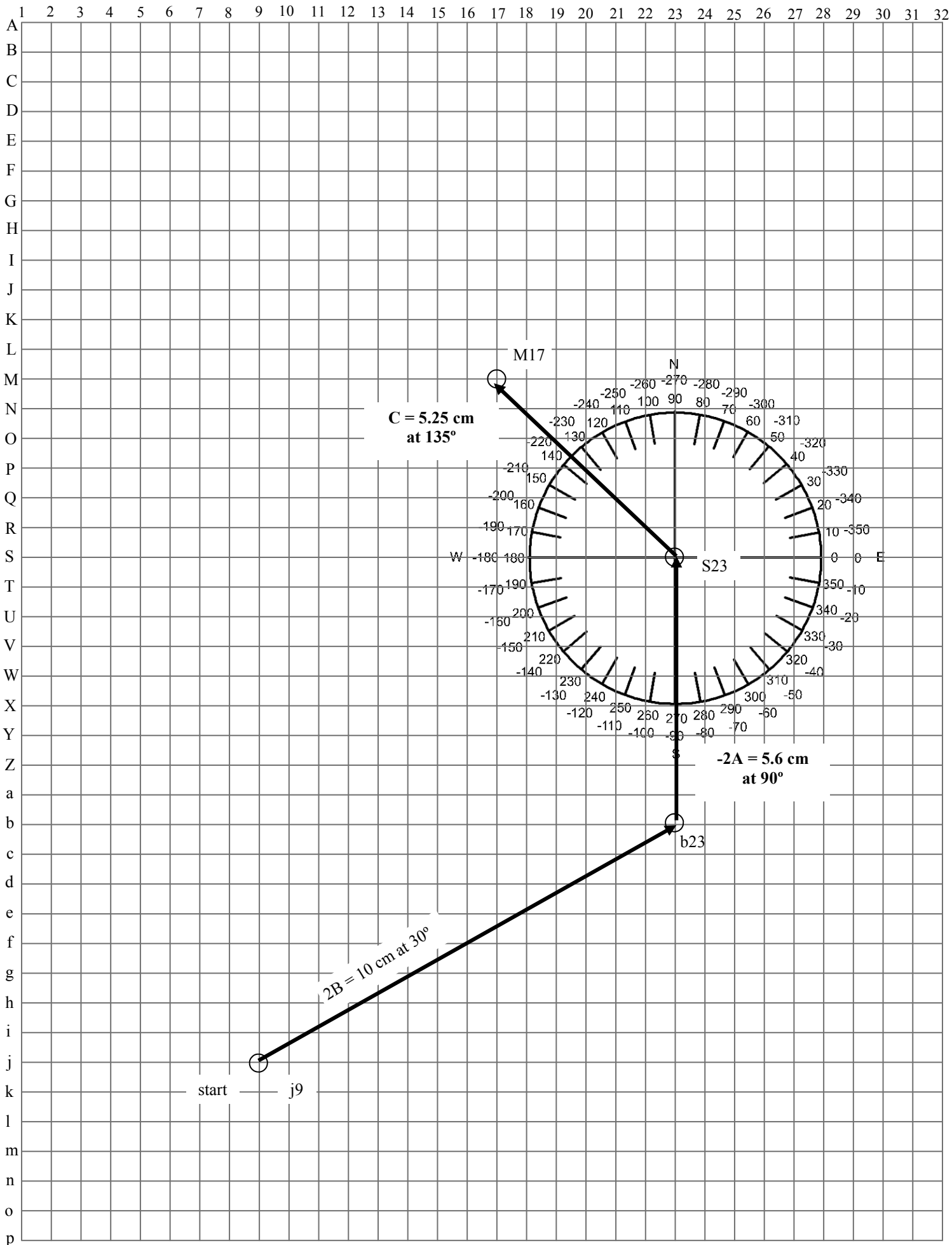
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

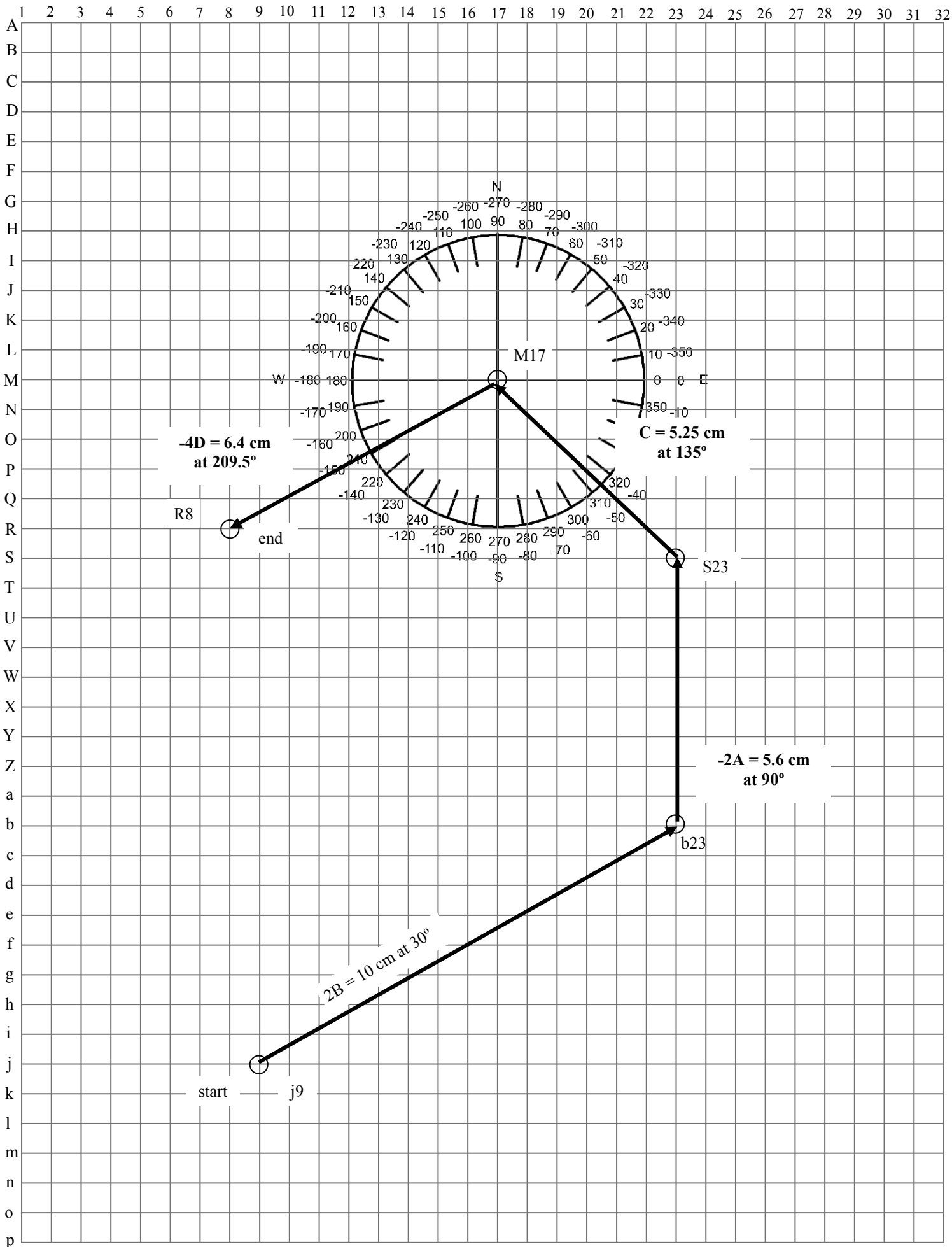
A
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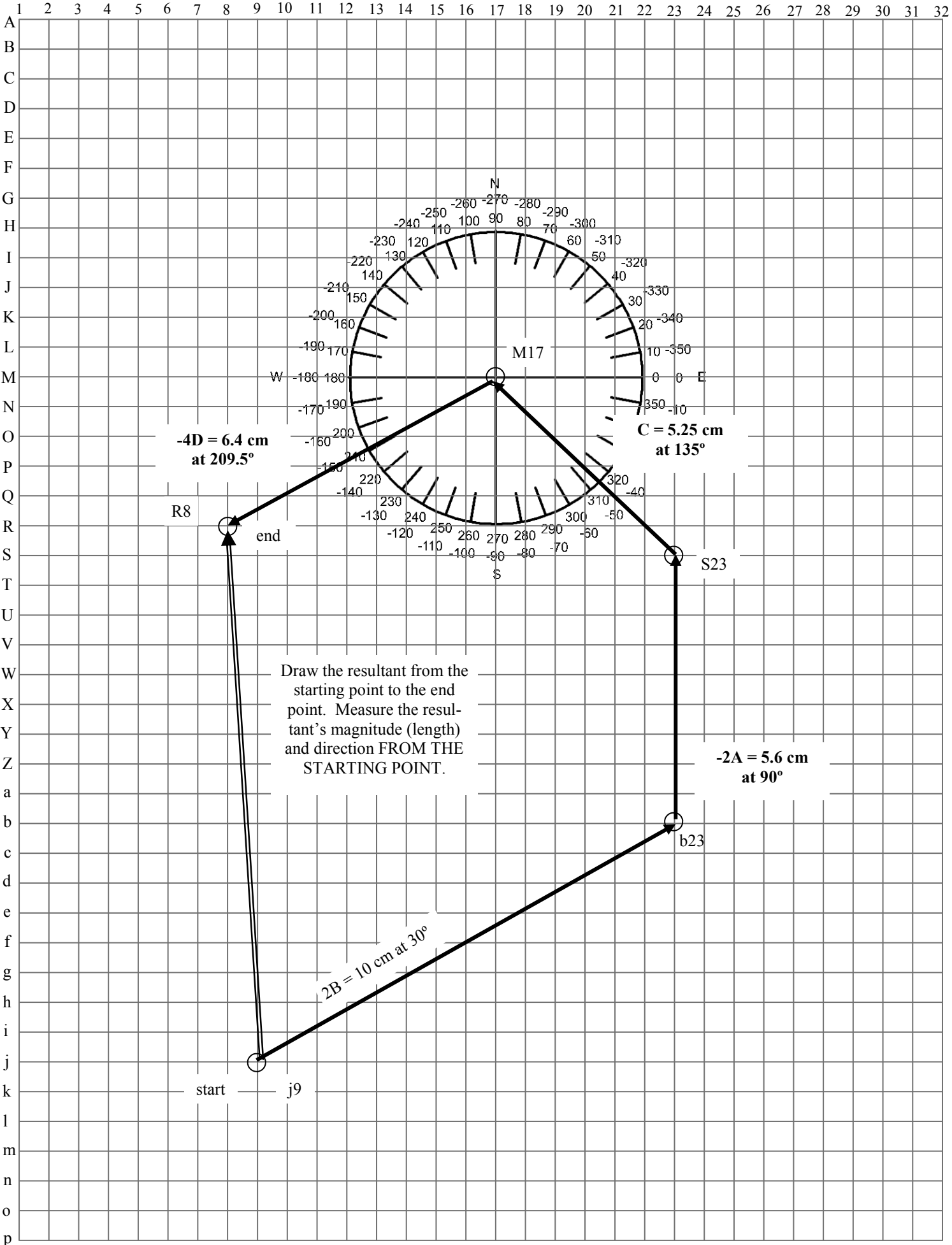
Draw the first vector. I'm going to assume that you know how to use a ruler.











Draw the resultant from the starting point to the end point. Measure the resultant's magnitude (length) and direction FROM THE STARTING POINT.

Key Ex 1: $2B - 2A + C - 4D$ Starting at $j9$

