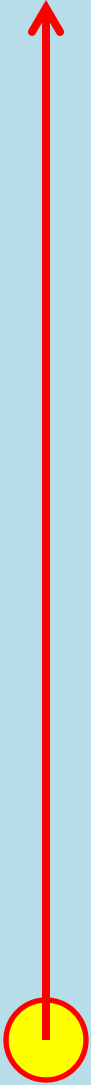




north

Otter the dog walked  
north for 20 meters.



Otter's Initial Position



north



Otter's Final Position

Then, he walked east  
for 12 meters.



Otter's Initial Position

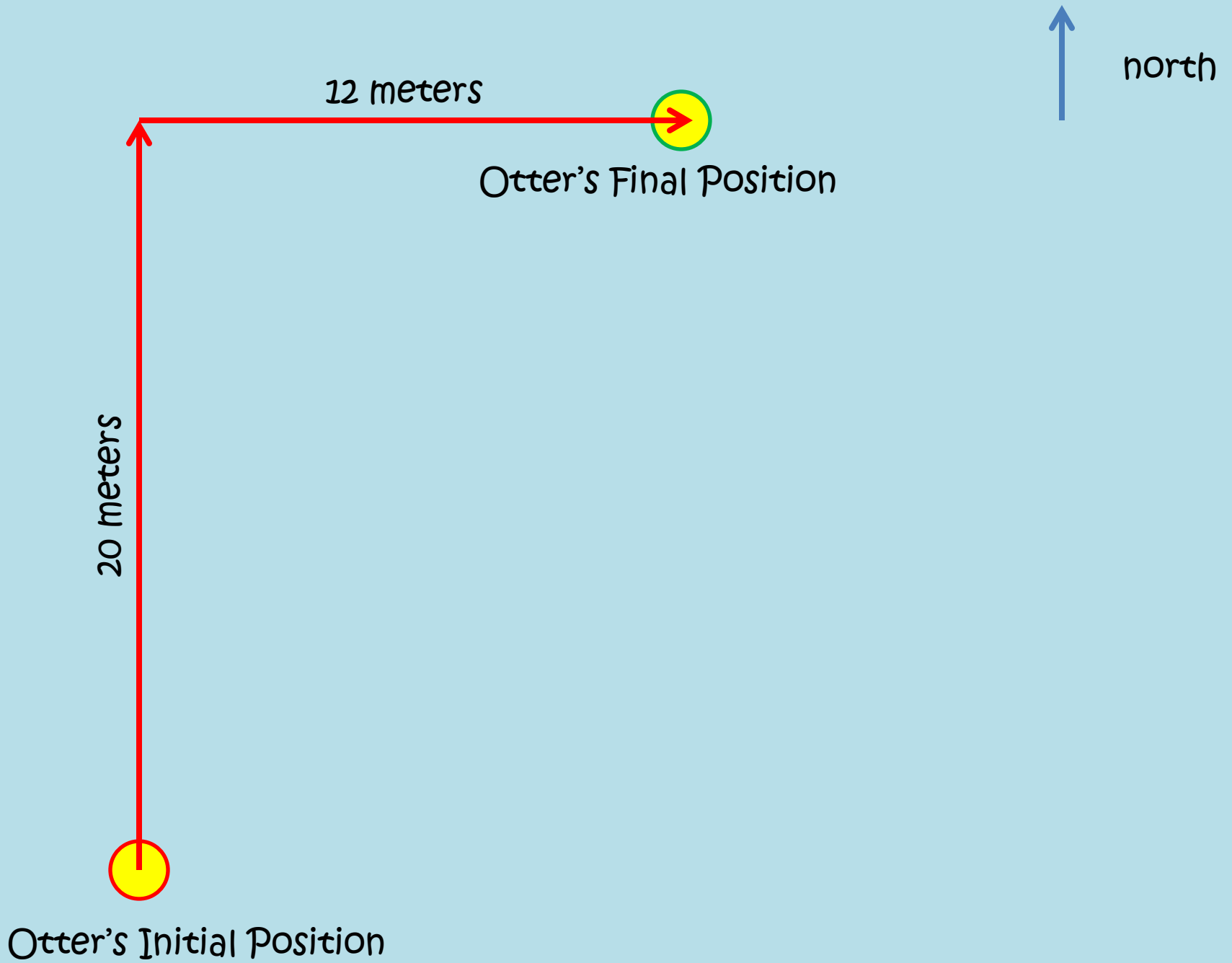


north



Otter's Initial Position

How far did Otter end up from where he started and in which direction?





north

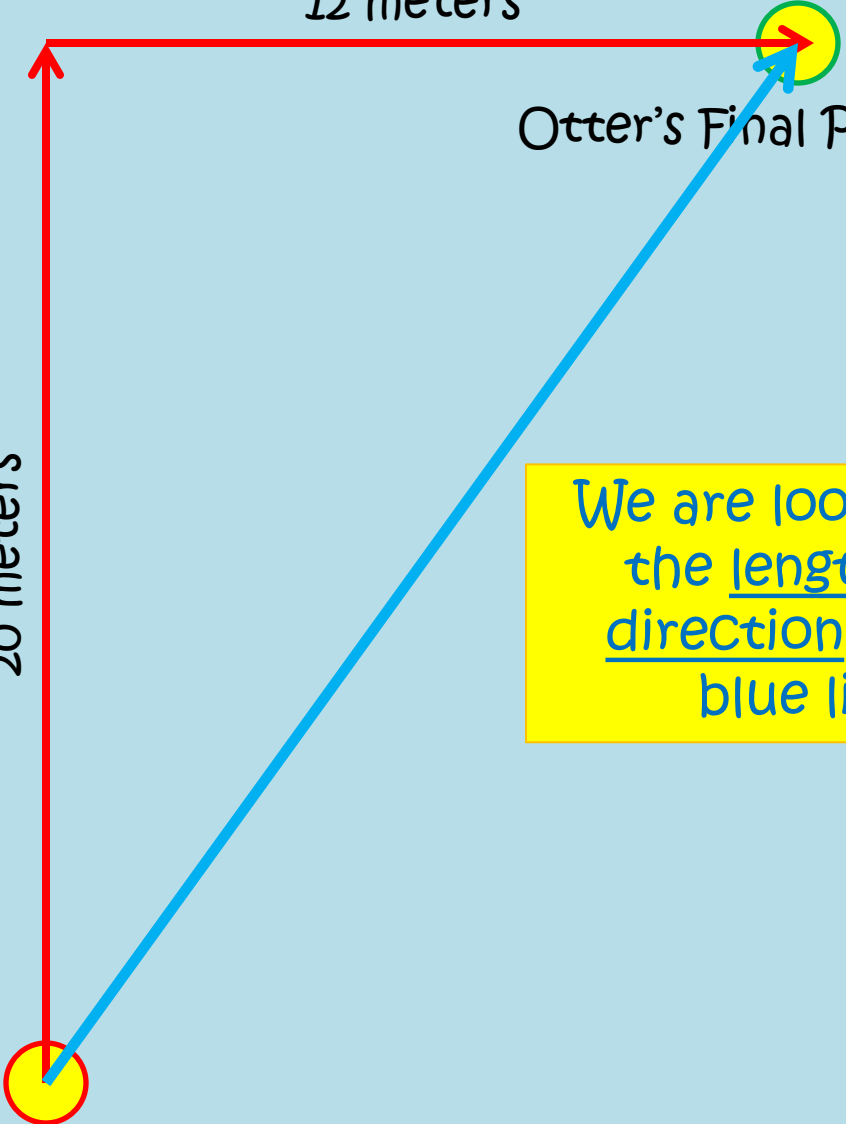
12 meters

20 meters

Otter's Final Position

We are looking for the length and direction of the blue line.

Otter's Initial Position





north

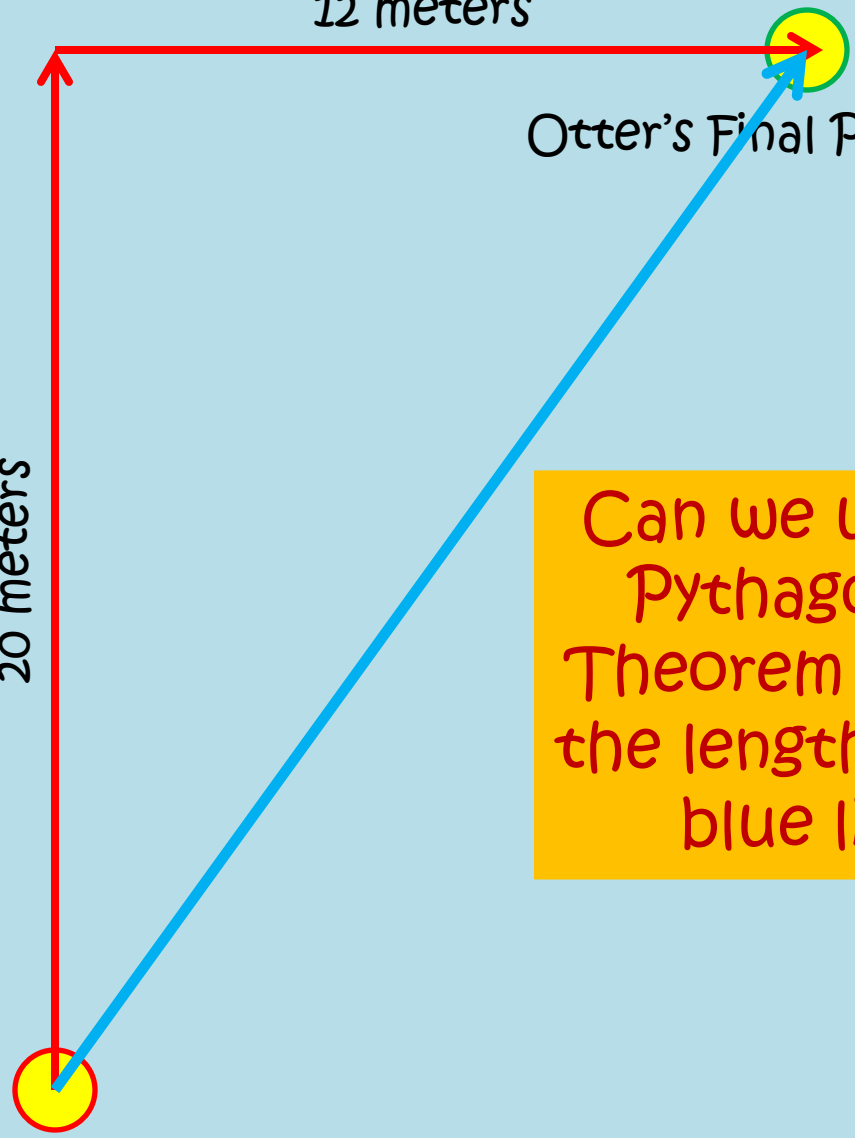
12 meters

20 meters

Otter's Final Position

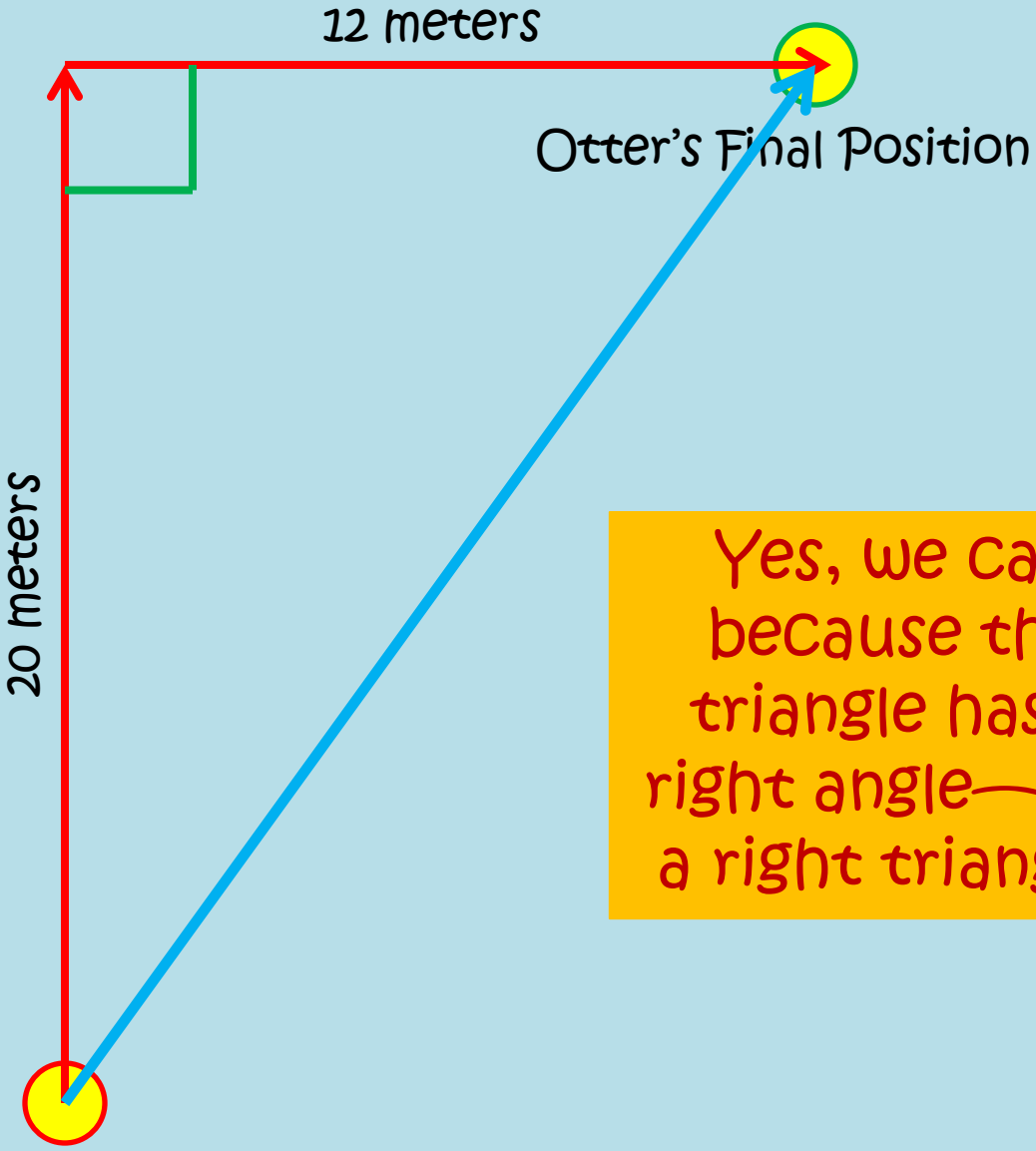
Otter's Initial Position

Can we use the Pythagorean Theorem to find the length of the blue line?



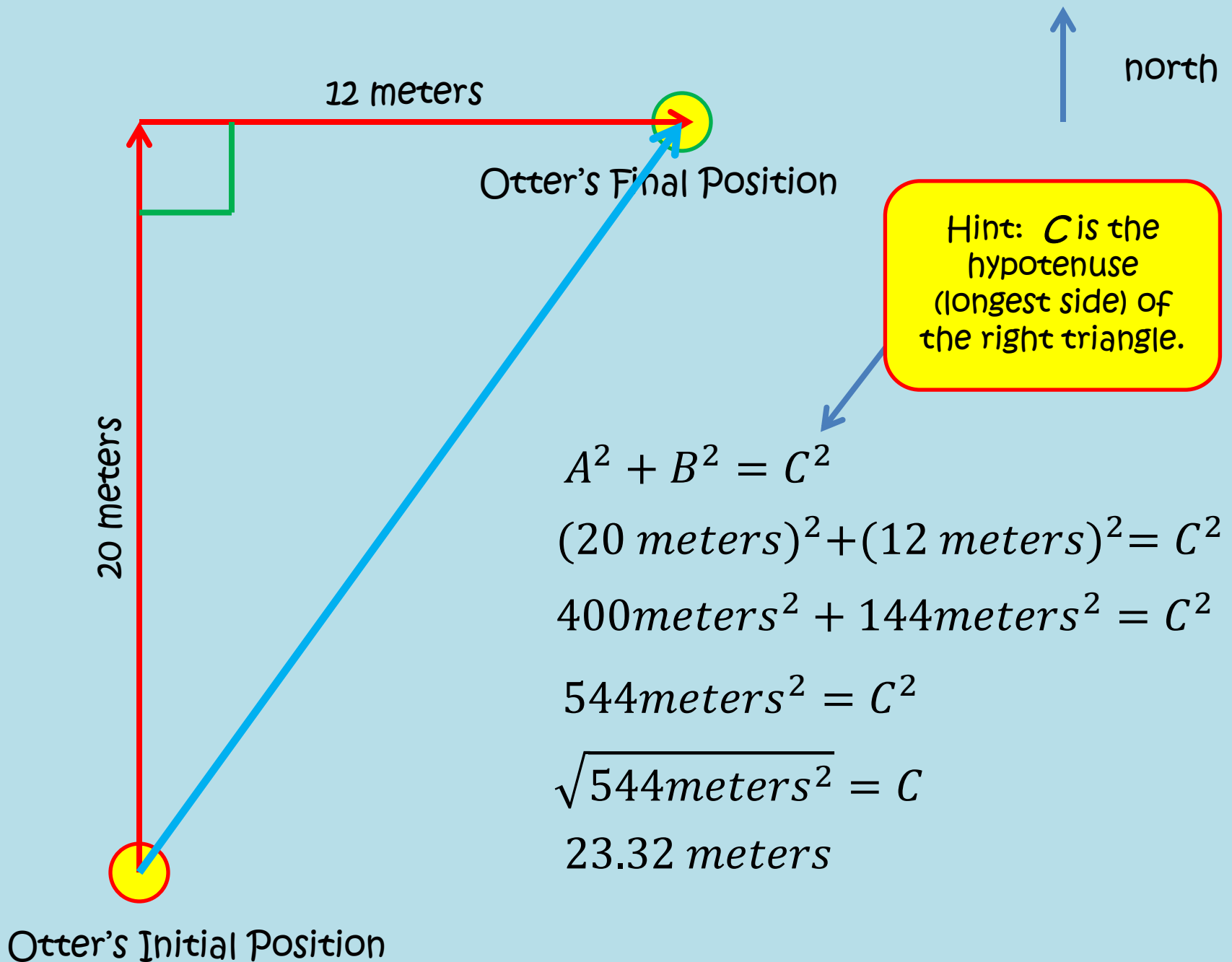


north

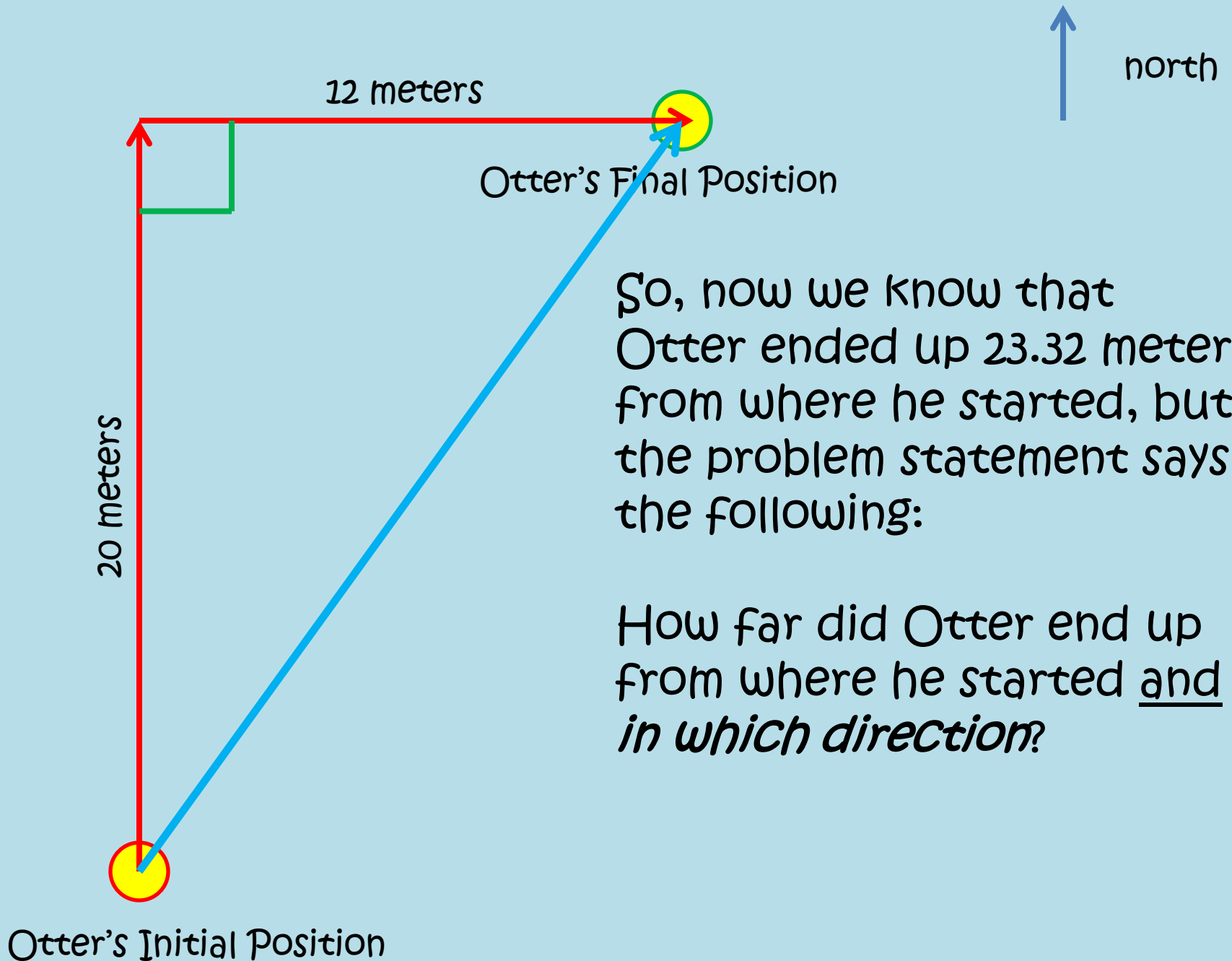


Yes, we can because the triangle has a right angle—it is a right triangle.

Otter's Initial Position

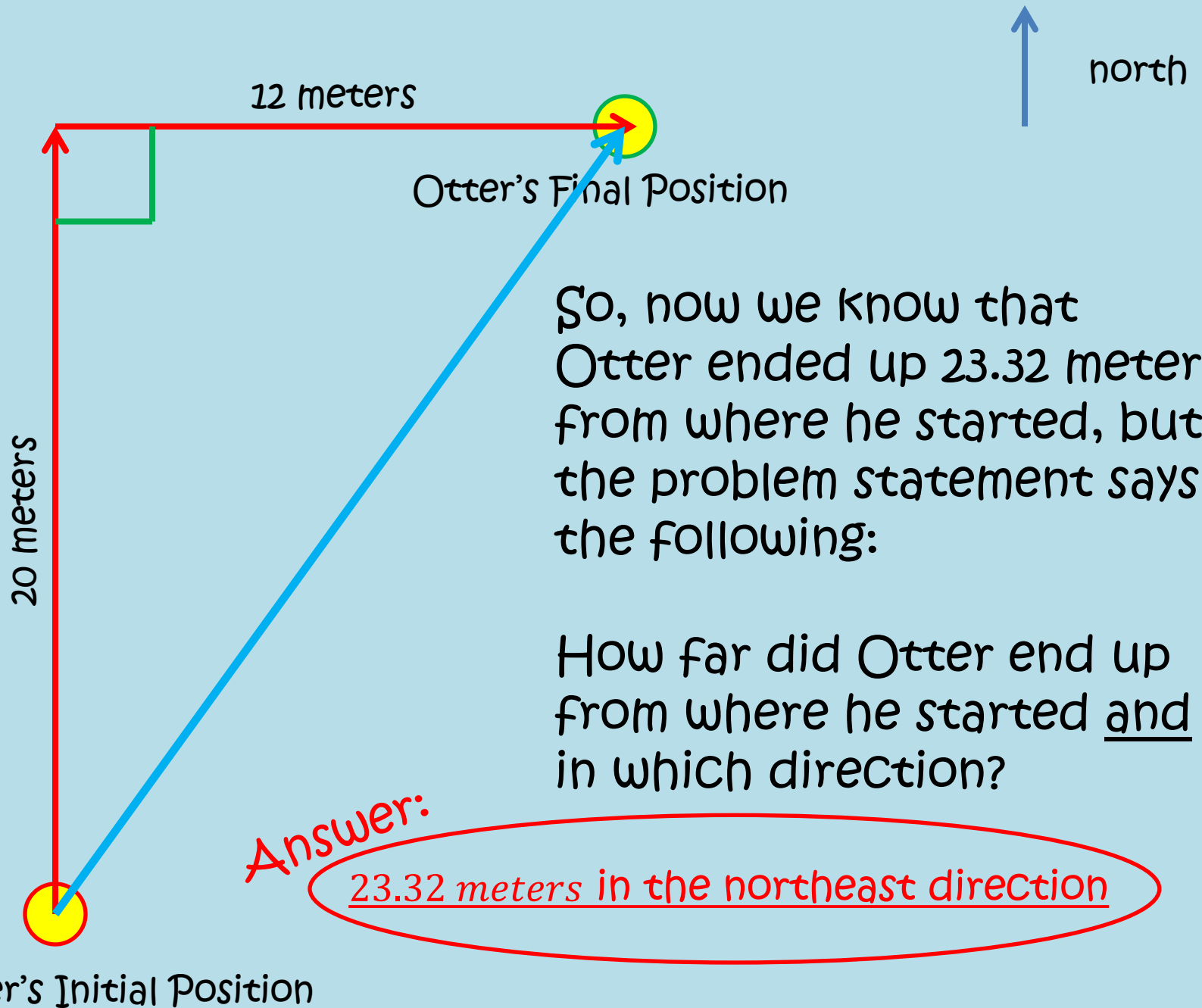






So, now we know that Otter ended up 23.32 meters from where he started, but the problem statement says the following:

How far did Otter end up from where he started and *in which direction?*



So, now we know that Otter ended up 23.32 meters from where he started, but the problem statement says the following:

How far did Otter end up from where he started and in which direction?

*Answer:*

23.32 meters in the northeast direction

