

6 March 2020

10.1 Do Now: Trig review, linear equations

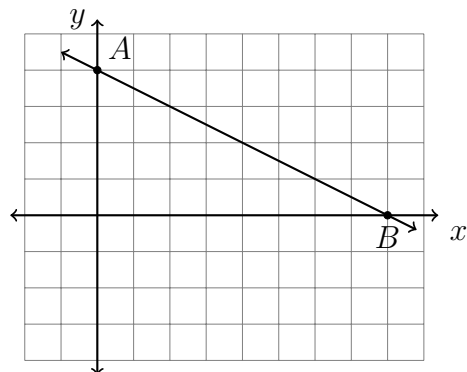
1. A dilation centered at the origin with scale factor $k = \frac{1}{2}$ maps $\overleftrightarrow{AB} \rightarrow \overleftrightarrow{A'B'}$.

(a) Draw and label the image.

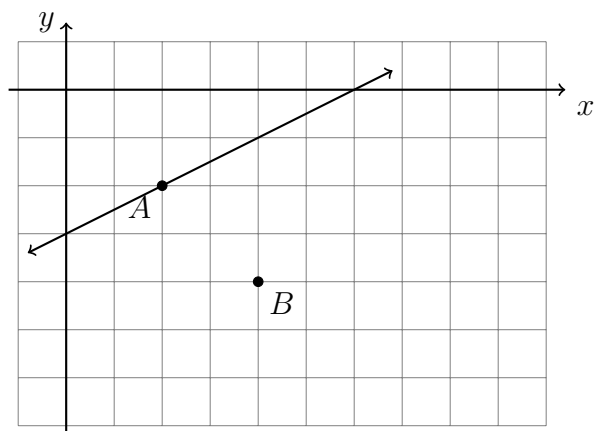
(b) What are the y -intercepts of $\overleftrightarrow{A'B'}$ and \overleftrightarrow{AB} ?

(c) What are their slopes?

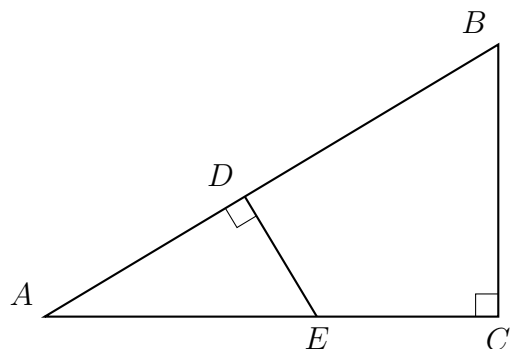
(d) Write down the equations of the two lines.



2. A line through the point $A(2, -2)$ has a slope $m = \frac{1}{2}$. A dilation centered at the origin maps $A \rightarrow B$ as shown. Draw the image the line. Write the equations of both lines.



3. In $\triangle ABC$ shown below, $\angle ACB$ is a right angle, E is a point on \overline{AC} , and \overline{ED} is drawn perpendicular to hypotenuse \overline{AB} . If $AC = 8$, $BC = 6$, and $DE = 4$, what is the length of \overline{AD} ?



4. Express the result to the nearest thousandth.

(a) $\tan 67^\circ =$

(b) $\tan 45^\circ =$

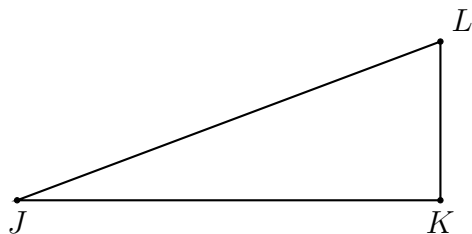
5. Round each value to the nearest degree.

(a) $\tan^{-1}(0.75) =$

(b) $\tan^{-1}(\sqrt{3}) =$

6. Given right $\triangle JKL$ with $\overline{JK} \perp \overline{KL}$, $JK = 8$, $m\angle J = 22^\circ$. (mark the diagram)

(a) Let x be the length of the side opposite $\angle J$, $x = KL$. Write an equation expressing $\tan \angle J$ as a ratio of *opposite* over *adjacent*.



(b) Solve the equation for $x = KL$.

(c) Use the Pythagorean formula to find the length JL