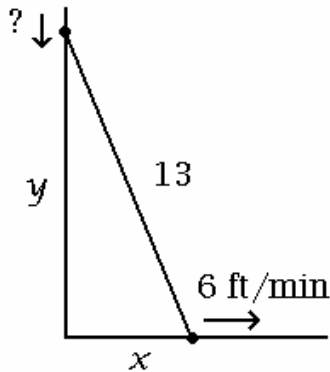


Embedded Calculus task and Scoring Rubric:

Name: _____



A ladder 13 feet long is leaning against a wall. The bottom of the ladder is being pulled away from the wall at the constant rate of 6 ft/min. How fast is the top of the ladder moving down the wall when the bottom of the ladder is 5 ft from the wall?

Scoring Rubric for Math 120 Final Exam Common Question

- 0 – Did not write down a correct expression of Pythagoras’ formula or name correctly the quantity “6 ft/min.”
- 1 – Wrote down Pythagoras’ formula (even with only 5-12-13) or that $\frac{dx}{dt} = 6$.
- 2 – Recognized that $\frac{dx}{dt} = 6$ and wrote Pythagoras’ formula with variables.
- 3 – Correctly differentiated the equation obtained from Pythagoras’ formula. (Even if they did not write down $\frac{dx}{dt} = 6$.)
- 4 – Correctly calculated that $\frac{dy}{dt} = -2\frac{1}{2}$ when $x = 5$.