

Answer on Question #37506- Math - Algebra

Suppose that a cold front is passing through the United States at noon with a shape described by the graph of:

$$f(x) = \frac{1}{20}x^2$$

If the cold front is moving south at 40mph for 4 hours and retains its present shape. what would be the equation of its graph at the time? How do you change 40mph for 4 hours to hundred of miles?

Solution:

The equation of its graph at $t = 0$

$$f(x) = \frac{1}{20}x^2$$

cold front passed the distance $40 \frac{\text{miles}}{\text{h}} \cdot 4\text{h} =$

160 miles south or 1.6 hundred of miles

So, the equation of its graph at $t = 4\text{h}$ becomes:

$$f(x) = \left(\frac{1}{20}\right)x^2 - 160 \text{ (miles)}$$

$$f(x) = \left(\frac{1}{20}\right)x^2 - 1.60 \text{ (hundred of miles)}$$

Answer: equation of its graph at the time $t=4\text{h}$ will be:

$$f(x) = \left(\frac{1}{20}\right)x^2 - 160$$

In hundred of miles:

$$f(x) = \left(\frac{1}{20}\right)x^2 - 1.60$$