Answer on Question#43489 – Math – Algebra

A computer manufacturing company would like to come up with a new laptop computer such that its monitor is 80 square inches smaller than the present ones. Suppose the length of the monitor of the larger computer is 5 inches longer than its width and the area of the smaller computer is 70 square inches. What are the dimensions of the monitor of the larger computer?

Solution:

First, let l is the length of the monitor of the larger computer, then the width of the monitor of the larger computer is $w = l - 5$. The area of the larger computer is:

$A = l(l - 5)$

Second,

$A - 80 = 70$

$A = 150$

$l(l - 5) = 150$

Expanding

$l^2 - 5l = 150$

$l^2 - 5l - 150 = 0$

$$l = \frac{5 \pm \sqrt{25 + 4 \cdot 150}}{2} = \frac{5 \pm 25}{2}$$

Since $l > 0$, then $l = 15$

$w = l - 5 = 15 - 5 = 10$

Answer: the length of the monitor of the larger computer is 15 inches, the width of the monitor of the larger computer is 10 inches.