

Solving a percent mixture problem using a system of linear equations

18 19 20 21 22 23 24 25 26 27 28 **x 29**

A chemical company makes two brands of antifreeze. The first brand is 60% pure antifreeze, and the second brand is 85% pure antifreeze. In order to obtain 180 gallons of a mixture that contains 70% pure antifreeze, how many gallons of each brand of antifreeze must be used?

Answer Submitted:

First brand:	108 gallons
Second brand:	72 gallons

Correct Answer:

First brand: 108 gallons
 Second brand: 72 gallons

Handwritten work:

1st brand x 60%
 2nd brand y 85%

$x + y = 180$
 $.60x + .85y = .70(180)$

$x = 108$
 $y = 180 - 108$
 $y = 72$

$x + y = 180$
 $-x$
 $y = 180 - x$

$.60x + .85(180 - x) = .70(180)$
 $.60x + 153 - .85x = 126$
 $-.25x + 153 = 126$
 $-.25x = 27$
 $x = 108$

#GraphsFunctionsAndSystems