

Jan 8-9:07 AM

**TOC P.108 ACT Practice 1/8-1/12**

16. What expression must the center cell of the table below contain so that the sums of each row and each column are equivalent?

$-4x$	$9x$	$2x$	$= 7x$
$7x$	$3x$	$-3x$	
$4x$	$-5x$	$8x$	

F.  $5x$   
**G.  $3x$**   
 H.  $0$   
 J.  $-x$   
 K.  $-4x$

17. Point  $A$  is to be graphed in a quadrant, not on an axis, of the standard  $(x,y)$  coordinate plane below. If the  $x$ -coordinate and the  $y$ -coordinate of point  $A$  are to have the same signs, then point  $A$  must be located in:

A. Quadrant I only  
 B. Quadrant II only  
 C. Quadrant III only  
 D. Quadrant I or II only  
**E. Quadrant I or III only**

18. Reggie knows how to make 5 different entrees, 4 different side dishes, and 6 different desserts. How many distinct complete meals, each consisting of an entrée, a side dish, and a dessert, can Reggie make?

F. 16  
 G. 26  
 H. 72  
**J. 120**  
 K. 144

$5 \cdot 4 \cdot 6 = 120$

19. At a bottling plant, 10,000 liters of carbonated water are needed to produce 3,000 bottles of soda. How many liters of carbonated water are needed to produce 750 bottles of soda?

A. 225  
 B. 1,500  
**C. 2,500**  
 D. 4,000  
 E. 5,000

$\frac{10,000}{3,000} \times \frac{x}{750}$

~~$3,000x = 7,500,000$~~   
 $3,000 \quad 3,000$   
 $x = 2,500$

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# TOC P. 109 U8 - Pythagorean Theorem

## PYTHAGOREAN THEOREM

$a^2 + b^2 = c^2$

$a^2 + b^2 < c^2$  obtuse

$a^2 + b^2 = c^2$  right

$a^2 + b^2 > c^2$  acute

leg a, leg b, hypotenuse c

hypotenuse ALWAYS the longest side

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Draw the 3 similar triangles created.

AD:BD:AB

Triangle ABD: legs 3, 4; hypotenuse 5.

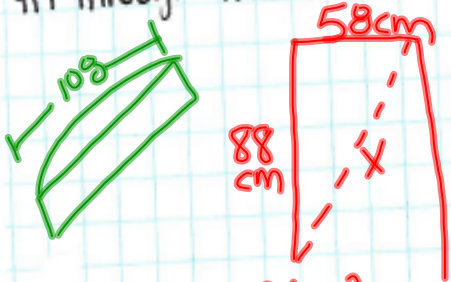
Triangle BDC: legs 6, 8; hypotenuse 10.

Triangle ABC: legs 30, 40; hypotenuse 50.

Similarity ratios:  $\times 2$  (ABD to BDC),  $\times 5$  (ABD to ABC)

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Mrs. Weber bought a circular table for her classroom. The diameter of the table is 108 cm. Her classroom door measures 88 cm tall and 58 cm wide. Will the table fit through the door?



$$58^2 + 88^2 = c^2$$

$$3364 + 7744 = c^2$$

$$\sqrt{11,108} = \sqrt{c^2}$$

$$105.4 = c$$

The sides of a  $\Delta$  are 4.5 in, 7.5 in, and 6 in. Is this a right triangle? If so, which side is the hypotenuse?

$$4.5^2 + 6^2 \stackrel{?}{=} 7.5^2$$

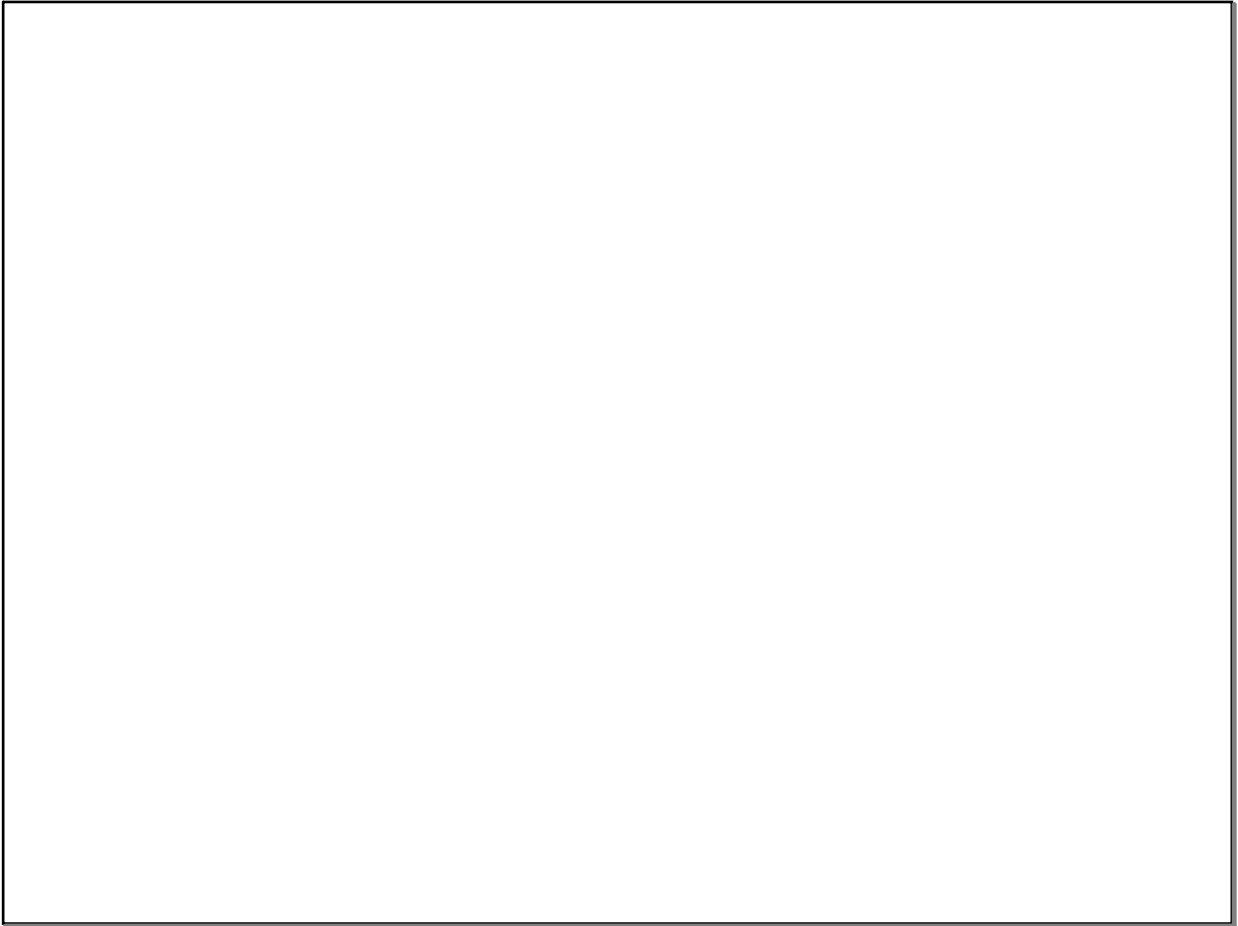
$$20.25 + 36 \stackrel{?}{=} 56.25$$

$$56.25 = 56.25$$

yes;  $c = 7.5$

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