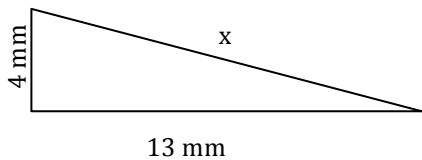


Name \_\_\_\_\_ Date \_\_\_\_\_

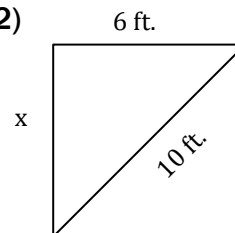
### Pythagorean Theorem & its Converse

Determine the length of the missing side of each right triangle. Round your answer to the nearest hundredth, if necessary.

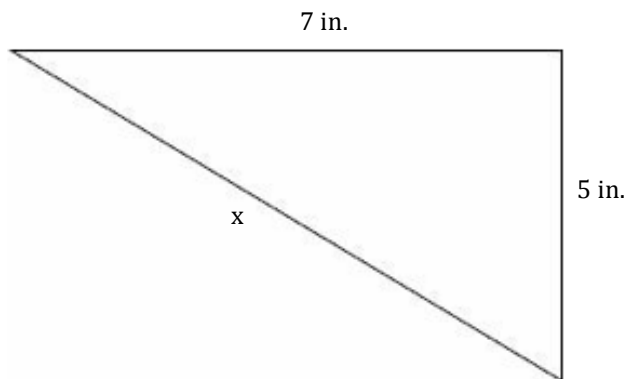
1)



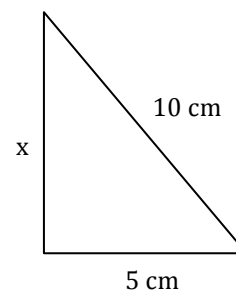
2)



3)

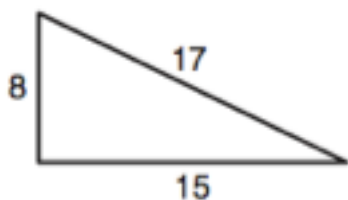


4)

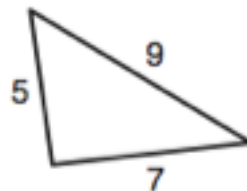


Use the converse of the Pythagorean Theorem to determine whether each triangle is a Right Triangle. Show your work and explain how you know.

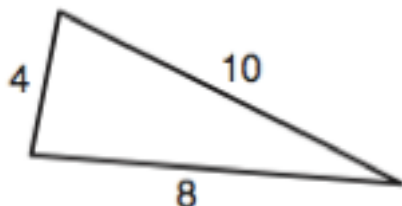
5)



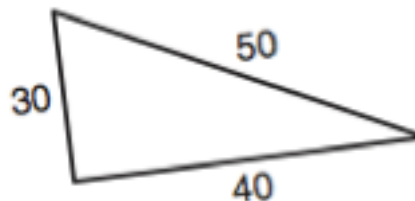
6)



7)



8)



Rewrite each equation in Standard Form.

9)  $4y = -2x - 17$

10)  $5 + 3y = -2(5x - 20)$

Write the equation of the line in slope-intercept form that passes through the given points. Then graph the equation.

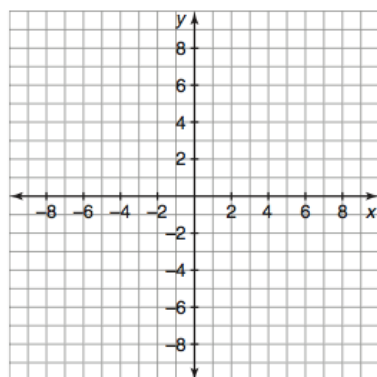
Remember:

1. Use the points to calculate the slope.
2. Use the slope and one of the points to calculate the y-intercept ( $b$ ).
3. Write the equation of the line ( $y = mx + b$ ).

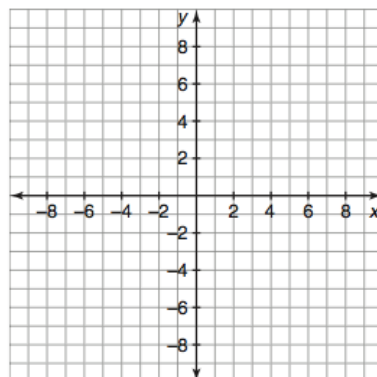
11) (1, 6) and (3, -4)

12) (2, 3) and (-4, 0)

m =      b =      equation:



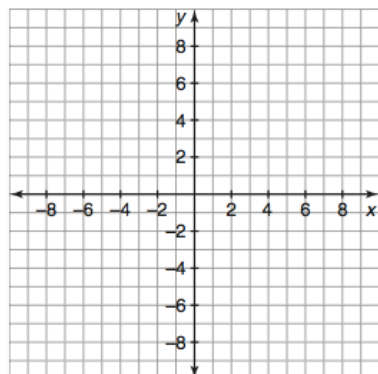
m =      b =      equation:



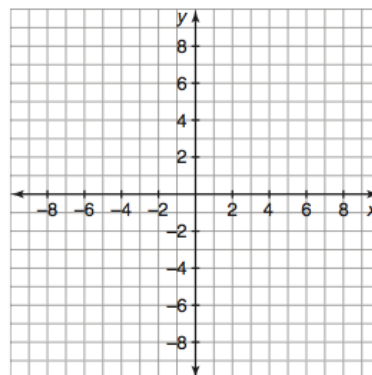
13) (1, 8) and (-2, -1)

14) (5, -4) and (-3, 4)

m =      b =      equation:



m =      b =      equation:



Use inverse equations (*and railroad tracks*) to solve each equation. **SHOW ALL WORK!**  
*\*Remember, most equations have one solution, but some have no solution and others have many solutions!*

15)  $24a - 8 - 10a = -2(4 - 7a)$

16)  $-9(5 + r) = -10 - 2r$

17)  $6m - 3 = 10 + -6(2 - m)$

18)  $4(1 - x) + 3x = -2(x + 1)$

Make a diagram of each situation then use the Pythagorean Theorem to solve.  
**SHOW ALL WORK** and label your answer.

19) A lacrosse field is a rectangle that is 60 feet wide by 110 feet long. What is the length of the diagonal that connects one corner of the field to the opposite corner?

20) Charlie has a ladder that is 20 feet long. If the top of the ladder reaches 16 feet up the side of the building, how far from the building is the base of the ladder?