**Show all work!**                                          **KEY**
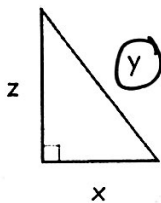
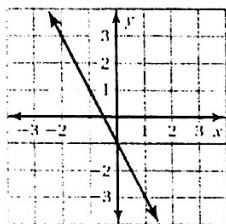1. Which side of the right triangle is the hypotenuse



2. Re-write the equation $4x - 2y = 10$ in slope-intercept form.   $y = 2x - 5$

3. Determine if the system has no solution, one solution, or many solutions. If it has one solution, identify what the solution is.
   $$4x + 6y = -12$$
   $$6x + 9y = 27$$   No Solution

4. What is the slope of this line?



   $-2$

5. Use substitution to solve the linear system:
   $$y - 3x = -1$$
   $$y = x - 7$$   $(-3, -10)$

6. Find the slope (m) and y-intercept (b) of: $3x + y = -18$.   $m = -3$
   $b = -18$

7. What is the slope of all horizontal lines? ___zero___   All vertical lines? __undefined__

8. Graph the equation $x = -4$
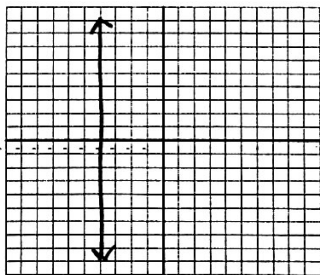


9. What is the equation of the line that has a slope of -5 and passes through the point (-3, 4)?
   $y = -5x - 11$

10. Is (6, -5) a solution to $7x - y = 47$?
    yes

11. Between which two integers does $-\sqrt{97}$ lie?
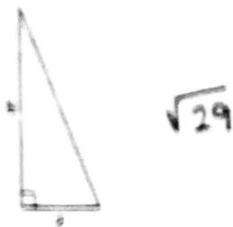    $-9 \ \& \ -10$

12. Find the slope of the line passing through the two points: (-2, 9) and (-2, 1)
    undefined

13. Find the x-intercept and y-intercept of $5x - 3y = 15$

    $(3, 0)$     $(0, -5)$
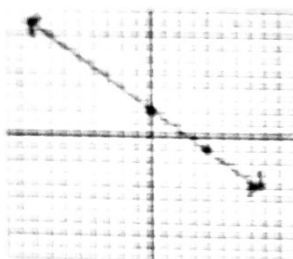    x-int.        y-int.

14. What is the value of the hypotenuse?

$\sqrt{29}$

15. A group of friends bought 11 tickets to see the film Can Out. The friends bought some senior tickets at $7.00 each and general admission tickets at $10.00 each. The total cost of the tickets was $101. How many senior tickets and how many general admission tickets were bought?

3 senior; 8 general

16. Graph the equation $y = -\frac{4}{3}x - 2$

17. Graph the equation $y = -x - 4$
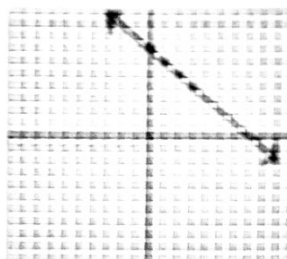
18. The area of a circle is 81π. Find the radius.

r = 9

19. Evaluate the expression $-\sqrt{121}$

-11

20. Evaluate the expression $24 + (\sqrt{16})^2$

40

21. The volume of a cube is 27000 cubic inches. What is the length of one side?

30 in

22. A plumber charges $60 + $45 per hour. Write an equation that represents the total fee y (in dollars) charged by the plumber for a job lasting x hours.
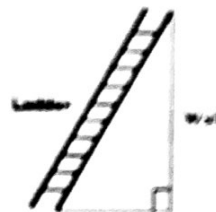
y = 45x + 60

23. Use elimination to solve the linear system.
$x + 3y = 5$
$3x - 3y = 1$

(2, 1)

24. A ladder that is 17 feet long is leaning against a vertical wall. If the bottom of the ladder is on level ground 8 feet away from the wall, how far up the wall is the top of the ladder?

b = 15 ft

25. Find the slope of the line passing through the two points (7, 4) and (-3, 4)

Zero

26. A right triangle has legs with lengths of 8 cm and 6 cm. What is the length of the hypotenuse?

10 cm