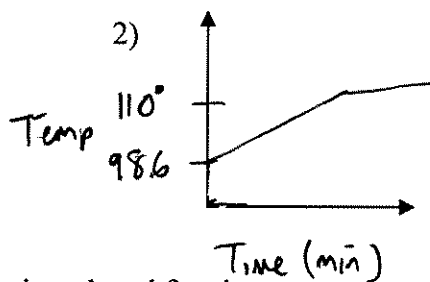
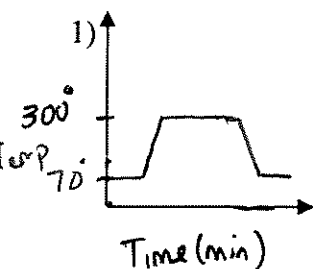


Only use a calculator if the problem states that you can.

**DAY 1**

Draw a function that represents each situation. Be sure to label the axis.

1. Kai turns on the oven and sets it to 300°. He bakes some cookies and then turns the oven off.
2. Nick has the flu and his temperature rises slowly until it reaches 110°.



Solve each equation. Leave all answers in reduced fractions.

3.  $(6) \frac{5}{6}x - \frac{1}{2} = \frac{5}{3} (6)$

$$5x - 3 = 10$$

$$5x = 13$$

$$\boxed{x = \frac{13}{5}}$$

4.  $\frac{1}{2}(x-6) = 2$

$$\frac{1}{2}x - 3 = 2$$

$$(2) \frac{1}{2}x = 5 \quad (2)$$

$$\boxed{x = 10}$$

5.  $5(x-2) + 8x - 14 = 9x - 2$

$$5x - 10 + 8x - 14 = 9x - 2$$

$$13x - 24 = 9x - 2$$

$$4x - 24 = -2$$

$$4x = 22$$

$$\boxed{x = \frac{11}{2}}$$

6.  $5x - (3 - x) = 2x + 6$

$$5x - 3 + x = 2x + 6$$

$$6x - 3 = 2x + 6$$

$$4x - 3 = 6$$

$$4x = 9$$

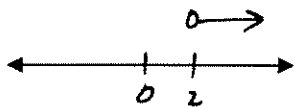
$$\boxed{x = \frac{9}{4}}$$

Solve and graph each inequality.

7.  $-6x < -12$

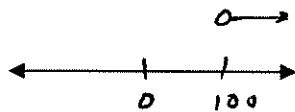
$$\frac{-6x}{-6} < \frac{-12}{-6}$$

$$\boxed{x > 2}$$



8.  $(5) \frac{n}{5} > 20 \quad (5)$

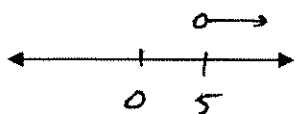
$$\boxed{n > 100}$$



10.  $-5 - x < -10$

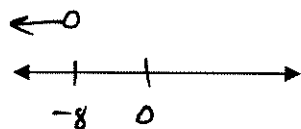
$$-x < -5$$

$$\boxed{x > 5}$$



11.  $(\frac{4}{3}) \frac{3}{4}x < -6 \quad (\frac{4}{3})$

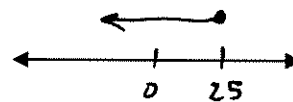
$$\boxed{x < -8}$$



9.  $-\frac{x}{5} + 4 \geq -1$

$$(-5) \frac{-x}{5} \geq (-5) \quad (-5)$$

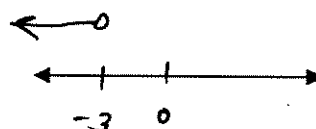
$$\boxed{x \leq 25}$$



12.  $7 - 5w > 22$

$$-5w > +15$$

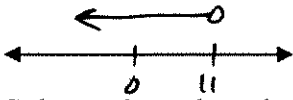
$$\boxed{w < -3}$$



$$13. 4x+7 < 3x+18$$

$$x+7 < 18$$

$$\boxed{x < 11}$$



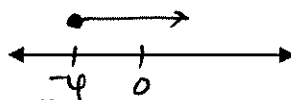
$$14. 8y-3 \leq 5(2y+1)$$

$$8y-3 \leq 10y+5$$

$$-2y-3 \leq 5$$

$$-2y \leq 8$$

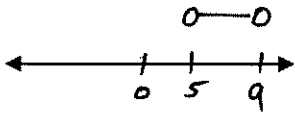
$$\boxed{y \geq -4}$$



Solve and graph each compound inequality.

$$15. 1 < -4+p < 5$$

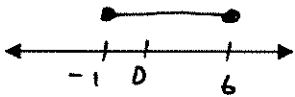
$$\boxed{5 < p < 9}$$



$$17. 2 \leq 2x+4 \leq 16$$

$$-2 \leq 2x \leq 12$$

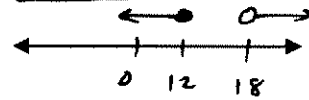
$$\boxed{-1 \leq x \leq 6}$$



$$16. \frac{x}{2}+1 \leq 7 \text{ or } x-11 > 7$$

$$\frac{x}{2} \leq 6$$

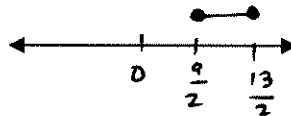
$$\boxed{x \leq 12 \text{ or } x > 18}$$



$$18. 8 \leq 2x-1 \leq 12$$

$$9 \leq 2x \leq 13$$

$$\boxed{\frac{9}{2} \leq x \leq \frac{13}{2}}$$



Solve each absolute value problem. Graph #21&22 on a number line.

$$19. |7+x|-2=5$$

$$|7+x|=7$$

$$7+x=7 \quad 7+x=-7$$

$$\boxed{x=0}$$

$$\boxed{x=-14}$$

$$20. -2|-5-2x|=-26$$

$$|-5-2x|=13$$

$$-5-2x=13$$

$$-2x=18$$

$$\boxed{x=-9}$$

$$-5-2x=-13$$

$$-2x=-8$$

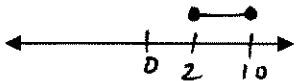
$$\boxed{x=4}$$

$$21. \left| \frac{1}{2}x-3 \right| \leq 2$$

$$-2 \leq \frac{1}{2}x-3 \leq 2$$

$$1 \leq \frac{1}{2}x \leq 5$$

$$\boxed{2 \leq x \leq 10}$$



$$22. |5-3x|-2 \geq 6$$

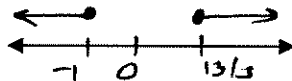
$$|5-3x| \geq 8$$

$$5-3x \leq -8 \text{ OR } 5-3x \geq 8$$

$$-3x \leq -13$$

$$-3x \geq 3$$

$$\boxed{x \geq 13/3 \text{ OR } x \leq -1}$$



23. Write an example of an absolute value equality that has no solution.

$$|3x+1| = -6$$

24. One of these inequalities has no solution and the other has all real numbers as the solution. Explain which one has each solution and why.

$|x-4| > -5$  → all real numbers. Absolute value always positive! (or zero)

$|x-4| < -5$  → no solution. Absolute value can't be negative!

Use the charts below to find the slope.

25.

year	# of students in the freshman class
2008	245
2010	295
2012	345
2014	395

$$m = \frac{295 - 245}{2010 - 2008} = \frac{50}{2} = 25$$

26.

x	y
6	20
3	22
0	24
-3	26

$$m = \frac{22 - 20}{3 - 6} = \frac{2}{-3} = -\frac{2}{3}$$

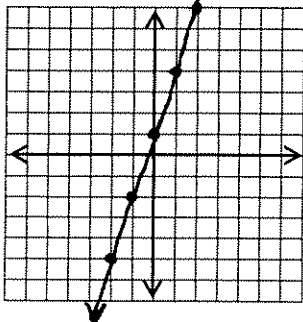
27.

x	y
2	40
4	50
6	60
8	70

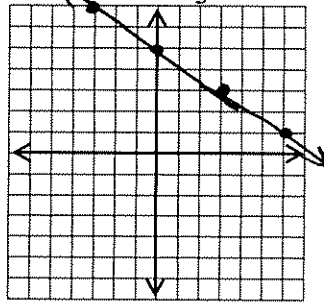
$$m = \frac{50 - 40}{4 - 2} = \frac{10}{2} = 5$$

Graph each line.

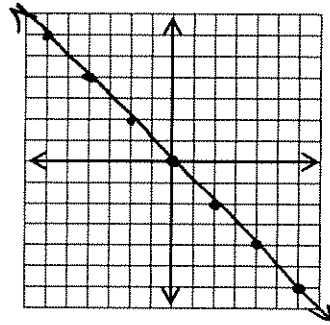
28.  $y = 3x + 1$



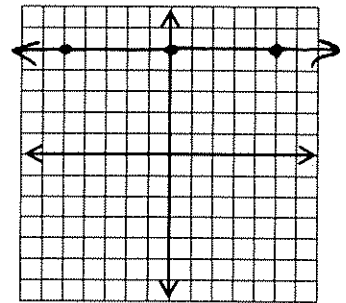
29.  $y = 5 - \frac{2}{3}x$



30.  $y = -x$



31.  $y = 5$

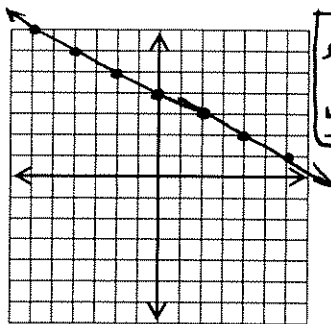


Find the slope and y-intercept of each line, then graph.

32.  $x + 2y = 8$

$$2y = -x + 8$$

$$y = -\frac{1}{2}x + 4$$

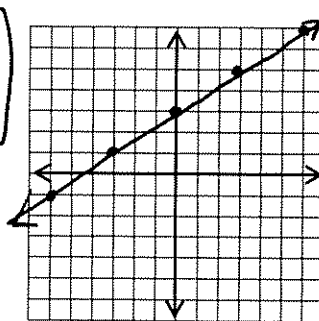


slope =  $-\frac{1}{2}$   
y-int = (0, 4)

33.  $3y - 2x = 9$

$$3y = 2x + 9$$

$$y = \frac{2}{3}x + 3$$

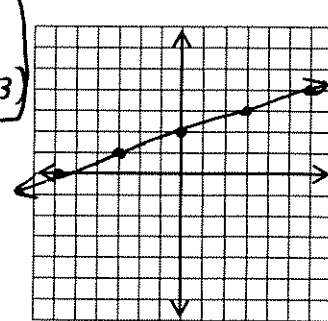


slope =  $\frac{2}{3}$   
y-int = (0, 3)

34.  $-3y + 6 = -x$

$$-3y = -x - 6$$

$$y = \frac{1}{3}x + 2$$



slope =  $\frac{1}{3}$   
y-int = (0, 2)

35. A leaf falls from a tree. In five seconds, it's floated down to a height of 16 feet. In seven seconds, it's down at 8 feet.

a. Find the equation of the line describing the height of the leaf.

$(5, 16)$   $m = \frac{8 - 16}{7 - 5} = \frac{-8}{2} = -4$   
 $(7, 8)$

b. Use your equation to find the height of the leaf in 8 seconds.

$$y = -4(8) + 32 = 4 \text{ feet}$$

$$y - 16 = -4(x - 5)$$

$$y - 16 = -4x + 20$$

$$y = -4x + 36$$

c. Write a sentence explaining what the slope means for the leaf in this problem (you must have the slope in your sentence). every second, it falls 4 feet

d. Write a sentence explaining what the y-intercept means for the leaf in this problem (you must have the y-intercept in your sentence).  $(0, 36)$  at 0 seconds, the leaf is 36 feet high.

e. Find the x-intercept. Then write a sentence explaining what the x-intercept means for the leaf in this problem (you must have the x-intercept in your sentence).

$$y = 0!$$

$$0 = -4x + 36$$

$$-36 = -4x$$

$$9 = x$$

at 9 seconds, the leaf lands (height = 0)