

## Math 1A Honors Final Review

1. Solve the equation:  $2(4x + 2) = 4x - 12(x - 1)$

- a)  $\frac{1}{4}$       b)  $\frac{1}{2}$       c) 0      d) 2

2. Companies A and B are internet providers. Company A charges a \$60 installation fee and \$42.95 per month. Company B charges a \$25 installation fee and \$49.95 per month. Find the month when you would pay the same total amount for internet service.

- a) 5<sup>th</sup> month      b) 10<sup>th</sup> month      c) 12<sup>th</sup> month      d) They will never be the same

3. Solve.  $|x - 8| = 14$

- a) 22,      b)  $\frac{14}{8}$       c) 22, 6      d) 22, -6

4. Solve.  $-|3x - 4| = -5$

- a) 3      b)  $3, \frac{1}{3}$       c)  $3, \frac{-1}{3}$       d) No Solution

5. Solve the literal equation for  $y$ .  $9x - y = 45$

- a)  $y = 9x - 45$       b)  $y = x - 5$       c)  $y = 45x - 9$       d)  $y = -9x + 45$

6. The formula to convert from Celsius to Fahrenheit is:  $F = \frac{5}{9}C + 32$ . Solve for  $C$ .

- a)  $C = \frac{9}{5}F - 32$       b)  $C = \frac{9}{5}(F - 32)$       c)  $C = \frac{5}{9}(F - 32)$       d)  $C = \frac{5}{9}(F + 32)$

**In problems 7 & 8, solve the inequality and give the answer in interval notation.**

7.  $2x - 3 > 7$

- a)  $(2, \infty)$       b)  $(-\infty, 2)$       c)  $(5, \infty)$       d)  $(-\infty, 5)$

8.  $3 - 5x \leq 13$

- a)  $[2, \infty)$       b)  $[-2, \infty)$       c)  $(-\infty, 2]$       d)  $(-\infty, -2]$

**In problems 9 & 10, solve the compound inequality and answer in interval notation.**

9.  $-9 \leq -3r - 3 < 24$

- a)  $[0, 11)$       b)  $(0, 11]$       c)  $(-9, 2]$       d)  $[-9, 2)$

10.  $2r + 3 < 7$  or  $-r + 9 \leq 2$

- a)  $(2, 7]$       b)  $[2, 7)$       c)  $(-\infty, 2] \cup (7, \infty)$       d)  $(-\infty, 2) \cup [7, \infty)$

**Solve the inequality and answer in interval notation.**

11.  $|x - 5| \leq 10$

- a)  $[-5, 15]$       b)  $(-5, 15)$       c)  $(-\infty, -5) \cup (15, \infty)$       d)  $(-\infty, -5] \cup [15, \infty)$

**In problems 12 & 13, determine if the relation represents a function.**

12.  $(1, 1), (2, 1), (3, 2), (4, 2)$

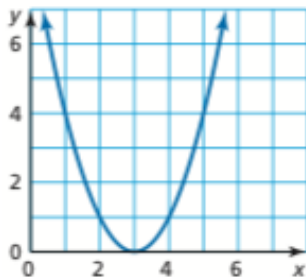
13.  $(1, 0), (1, 2), (2, 3), (2, 5)$

- a) Yes      b) No

- a) Yes      b) No

14. Does the graph represent a function?

- a) Yes      b) No



In problems 15 & 16, determine whether each equation represents a linear or nonlinear function.

15.  $y = x^2 - 3$

- a) linear      b) nonlinear

16.  $y = 2(x - 3)$

- a) linear      b) nonlinear

17.  $f(x) = 2x - 3$ , evaluate  $f(-2)$ .

- a) 1      b) -5      c) -7      d) -10

18.  $f(x) = -\frac{4}{5}x + 7$ , find when  $f(x) = -5$

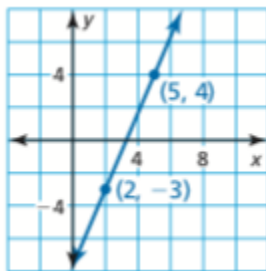
- a) 3      b) 11      c) 27      d) 15

19. Find the  $x$  and  $y$  intercepts of the linear equation:  $2x + 3y = 12$

- a)  $x$ -intercept = 6      b)  $x$ -intercept = 2      c)  $x$ -intercept = -2      d)  $x$ -intercept = -6  
 $y$ -intercept = 4       $y$ -intercept = 3       $y$ -intercept = -3       $y$ -intercept = 4

20. Find the slope.

- a) 7      b)  $\frac{3}{7}$   
c)  $\frac{1}{7}$       d)  $\frac{7}{3}$



21. Find the slope and  $y$ -intercept of the linear equation:  $-5x = 8 - y$

- a)  $m = -5$       b)  $m = -\frac{5}{8}$       c)  $m = -1$       d)  $m = 5$   
 $y$ -int = 8       $y$ -int = 8       $y$ -int = -8       $y$ -int = 8

22. If  $f(x) = 2x$ , describe the transformation from  $f$  to  $g$ .  $g(x) = f(x) + 2$

- a) right 2      b) left 2      c) up 2      d) down 2

23. If  $f(x) = 2x$ , describe the transformation from  $f$  to  $g$ .  $g(x) = f(x - 2)$

- a) right 2      b) left 2      c) up 2      d) down 2

24. Find a linear function with the values:  $f(0) = 2$  and  $f(2) = 4$ .

- a)  $y = x + 2$       b)  $y = 2x + 2$       c)  $y = \frac{1}{2}x + 2$       d)  $y = x - 2$

25. Find a linear function that has a slope of 2 and passes through the point (2, 1)

- a)  $y = 2x + 1$       b)  $y = 2x + 2$       c)  $y = 2x - 3$       d)  $y = \frac{1}{2}x$



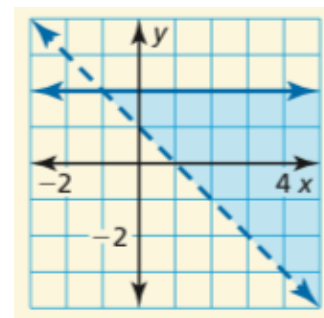
34.  $9x - 15y = 24$   
 $6x - 10y = -16$       a) (0, 0)      b) (6, 2)      c) (2, 6)      d) No Solution

35. You are running a concession stand at a basketball game. You are selling hot dogs and sodas. Each hot dog sells for \$1.50 and each soda sells for \$2.75. At the end of the night you made a total of \$188.00. You sold a total of 92 hot dogs and sodas combined. You must report the number of hot dogs sold and the number of sodas sold. How many hot dogs were sold and how many sodas were sold?

- a) 52 hot dogs      b) 40 hot dogs      c) 50 hot dogs      d) 57 hot dogs  
 40 sodas      52 sodas      42 sodas      35 sodas

36. What is the system of inequalities that are represented by the graph.

- a)  $y < -x + 1$       b)  $y > -x + 1$       c)  $y \geq -x + 1$       d)  $y \leq -x + 1$   
 $y \geq 2$        $y \leq 2$        $y < 2$        $y > 2$



For problems 37 – 41, use the following data set.

14, 15, 3, 15, 14, 14, 18, 15, 10, 16, 14

37. What is the mean?

- a) 13.5      b) 14.6      c) 11.2      d) 10.9

38. What is the median?

- a) 15      b) 14      c) 12      d) 11

39. What is the mode?

- a) 3      b) 18      c) 15      d) 14

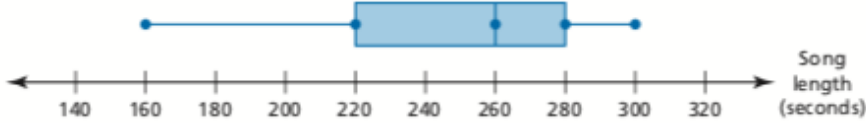
40. What is the range?

- a) 3      b) 18      c) 15      d) 14

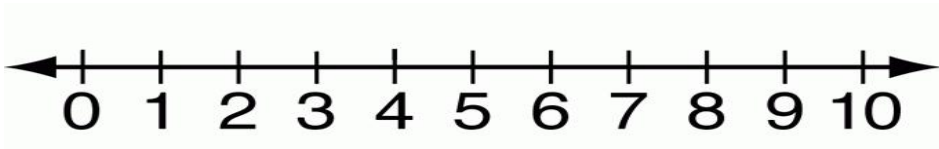
41. What is the standard deviation?

- a) 3.77      b) 2.56      c) 4.01      d) 3.25

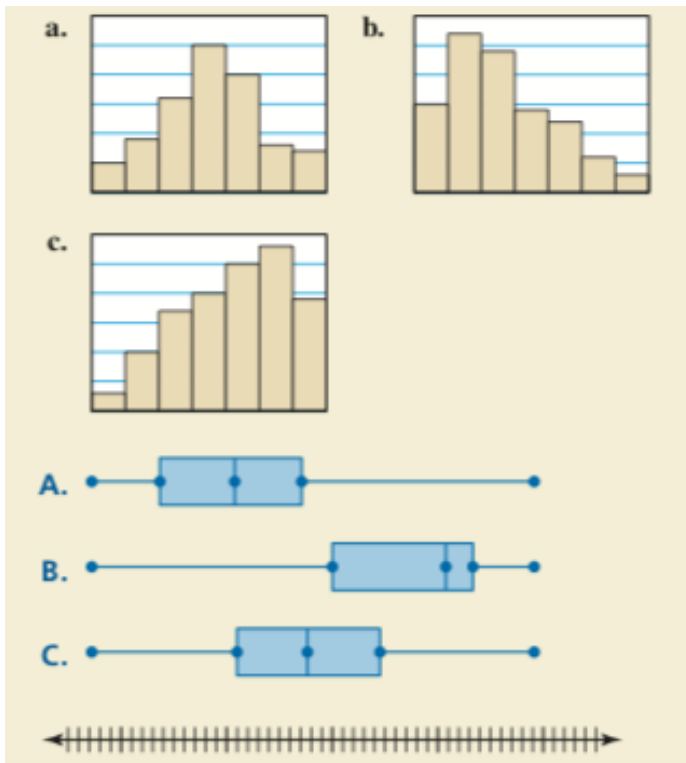
For questions 40 – 46, use the box and whisker plot of song lengths.



42. What is the minimum song length?                      43. What is the maximum song length?
44. What is the median song length?                      45. What is the song length at the first quartile?
46. What is the song length at the third quartile?      47. What is the range of the data?
48. What is the interquartile range of the data?      49. What is the shape of the distribution?
50. Make a box and whisker plot for the hours of television watched: 0, 3, 4, 5, 2, 4, 6, 5



51. Match the distribution represented by the histogram with the corresponding box and whisker plot.



- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

52. Explain what it means for a distribution to be skewed to the right.