

COMMON ASSESSMENT #1 (Practice)

FOR MULTIPLE CHOICE QUESTIONS, WRITE YOUR ANSWER ON THE SCANTRON.

B 1) What is the slope of the line passing through the points A(-3,9) and B(-5,-5)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - 9}{-5 - (-3)} = \frac{-14}{-2} = 7$$

- A. $-\frac{1}{2}$ B. 7 C. $\frac{1}{7}$ D. -2

B 2) Solve the equation: $9 - 11x = 25 - 3x$

$$\begin{aligned} 9 &= 25 + 8x \\ -25 & \quad -25 \\ -16 &= 8x \\ \frac{-16}{8} & \quad \frac{8x}{8} \\ x &= -2 \end{aligned}$$

- A. 2 B. -2 C. $\frac{8}{7}$ D. $\frac{16}{3}$

D 3) Solve the equation: $3(6 - x) = 9x + 7$

$$\begin{aligned} 18 - 3x &= 9x + 7 \\ +3x & \quad +3x \\ 18 &= 12x + 7 \\ -7 & \quad -7 \\ 11 &= 12x \end{aligned}$$

- A. $\frac{12}{11}$ B. -5 C. 5 D. $\frac{11}{12}$

A 4) Given that $y = -7 - 3x$, find the value of x when y = 4?

$$\begin{aligned} 4 &= -7 - 3x \\ +7 & \quad +7 \\ 11 &= -3x \\ \frac{11}{-3} & \quad \frac{-3x}{-3} \\ x &= -\frac{11}{3} \end{aligned}$$

- A. $-\frac{11}{3}$ B. -19 C. 5 D. 5.5

B 5) Solve the inequality: $6x - 9 > 7 - x$

$$\begin{aligned} 6x - 9 &> 7 - x \\ +x & \quad +x \\ 7x - 9 &> 7 \\ +9 & \quad +9 \\ 7x &> 16 \end{aligned}$$

- A. $x < 16/7$ B. $x > 16/7$ C. $x > 16/5$ D. $x < 16/5$

C 6) In music, Emory has test scores of 97, 77, 89, and 79 on the first 4 of 5 tests. What score does Emory need on the fifth test to have a mean score of 81?

$$\begin{aligned} \frac{97 + 77 + 89 + 79 + x}{5} &= 81 \\ 342 + x &= 405 \\ x &= 63 \end{aligned}$$

- A. 81 B. 90.6 C. 63 D. 88.5

A 7) The following are the scores of 36 students on a recent algebra test. If Laura got a 84 on the test, what percentile would that score represent?

| | | | | | |
|----|----|----|----|----|----|
| 47 | 57 | 62 | 72 | 84 | 45 |
| 47 | 90 | 59 | 95 | 74 | 74 |
| 69 | 63 | 63 | 45 | 48 | 47 |
| 52 | 74 | 71 | 50 | 92 | 60 |
| 87 | 53 | 56 | 95 | 94 | 82 |
| 90 | 54 | 50 | 72 | 66 | 83 |

scores < 84 → 28
Total scores → 36

$$\frac{28}{36} = 77.8\%$$

- A. 64 B. 38 C. 36 D. 66

C 8) Find quartile one, the median and quartile three of the following data set.
 $\{5, 11, 17, 18, 21, 22, 28, 31, 39, 39, 41\}$ $n=11$

- A. 24.7, 22, 39 B. 11, 21, 30 C. 17, 22, 39 D. 13, 24, 37

C 9) Solve the equation: $|7 - 5x| = 9$

- A. 9 B. 9, -9 C. $-2/5, 16/5$ D. $-2/5, -16/5$

$7-5x=9$ $7-5x=9$
 $-5x=2$ $-5x=-16$
 $x=\frac{2}{-5}$ $x=\frac{16}{-5}$

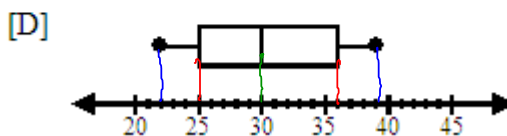
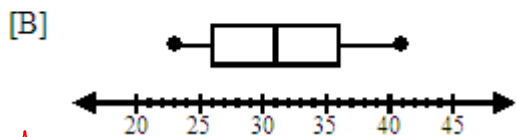
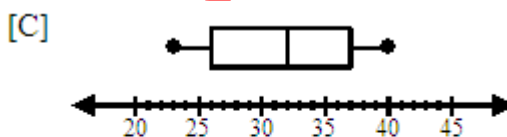
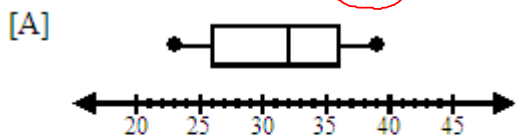
B 10) Which is the correct recursive formula for the sequence 2, -6, 18, -48, ...

- A. $u_1=2$ $u_n = -0.33(u_{n-1}), n \geq 2$ B. $u_1=2$ $u_n = -3(u_{n-1}), n \geq 2$
 C. $u_1=-48$ $u_n = -4(u_{n-1}), n \geq 2$ D. $u_1=-48$ $u_n = -0.25(u_{n-1}), n \geq 2$

11) Which is a box plot for the following data?

$\{28, 30, 22, 39, 28, 25, 36, 39, 31, 32, 38, 23, 25, 23, 28, 35, 36\}$
 $22, 23, 23, 25, 25, 28, 28, 28, 30, 31, 32, 35, 36, 36, 38, 39, 39$

use sort+Al on your calc. to re-order the data



A 12) Write the slope intercept formula for the sequence defined by the following recursive formula. $u_0 = -15$ $u_n = u_{n-1} + 3, n \geq 1$

- A. $y = -15 + 3x$ B. $y = 3 + 15x$
 C. $y = -15 - x$ D. $y = -15 - 3x$

$u_0 = y\text{-int.}$
 $d = \text{slope}$

B 13) Rewrite the equation in slope intercept form: $8x - 3y = 11$

- A. $3y = 8x - 11$ B. $y = \frac{8}{3}x - \frac{11}{3}$ C. $y = \frac{11}{3}x + \frac{8}{3}$ D. $y = -\frac{11}{5} + \frac{7}{5}x$

$8x - 3y = 11$
 $-\frac{3y}{-3} = \frac{-8x + 11}{-3}$
 $y = \frac{8}{3}x - \frac{11}{3}$

C 14) A line passes through the point $(-3, 7)$ and has slope $-\frac{11}{3}$. Find another point on the line.

Find the equation then use the table feature on your calculator

- A. $(-37, 9)$ B. $(-2, 5)$ C. $(6, -26)$ D. $(-3, 10)$

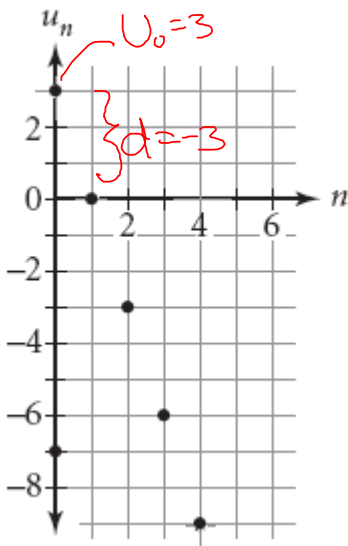
$y = -\frac{11}{3}(x - (-3)) + 7$
 $y = -\frac{11}{3}(x + 3) + 7$
 $y = -\frac{11}{3}x - 11 + 7$
 $y = -\frac{11}{3}x - 4$

A 15) Evaluate $12x - 3x^2$ when $x = -8$

- A. -288 B. -96 C. -8 D. 18

$12(-8) - 3(-8)^2$
 $-96 - 3(64)$
 $-96 - 192$
 -288

16) Consider the graph below.



a) Write the recursive formula that generates the points on the graph.

$$u_0 = 3$$
$$u_n = u_{n-1} - 3$$

b) Find the value of u_{13}

Via calculator $\rightarrow \{13, -36\}$ (-36)

c) What is the common difference (d)?

$$d = -3$$

d) What is the value of u_0 ?

$$3$$

e) What is the slope of the line through the points?

$$-3$$

f) What is the value of the y-intercept?

$$3$$

g) Write a linear equation in intercept form for the line that passes through the points.

$$y = -3x + 3$$

17) Here are the shoe sizes for the students in an 11th grade math class.

5.5, 5.5, 5.5, 5.5, 6, 6, 6, 6, 7, 7, 7, 7, 7.5, 7.5, 8, 8.5, 9

Female: 8, 7, 5.5, 7, 6, 6, 7.5, 6, 5.5, 5.5, 7.5, 8.5, 9, 7, 7, 5.5, 6

Male: 9, 8, 10, 8.5, 7.5, 10, 10, 10, 7, 11, 9, 9.5, 10, 11, 10.5, 12.5

7, 7.5, 8, 8.5, 9, 9, 9.5, 10, 10, 10, 10, 10.5, 11, 11, 12.5

a) Find the mean, median and mode shoe sizes for the females

$$\frac{114.5}{17} = 6.7 \quad 7 \quad 5.5, 6.7$$

b) Which shoe size is most typical for the females? Why?

around 6 It is the median of the 3 modes.

c) Find the mean, median and mode shoe sizes for the males

$$\frac{153.5}{16} = 9.6 \quad 9.6 \quad 10$$

d) Which shoe size is the most typical for the males? Why?

Between 9.5-10 It takes into account the average and the mode?

e) Find the 5-number summary for the females.

$$n=17 \quad \min = 5.5 \quad Q_1 = 5.75 \quad \text{med} = 7 \quad Q_3 = 7.5 \quad \max = 9$$

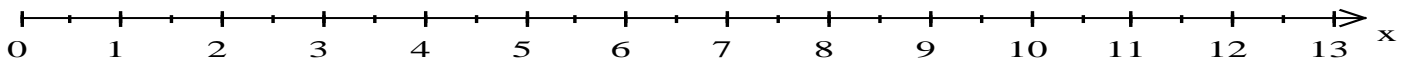
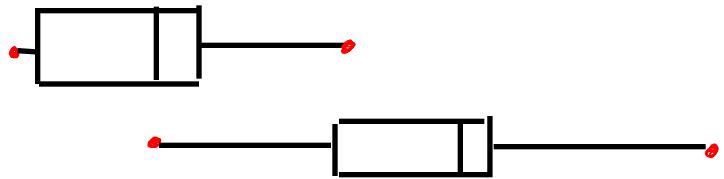
f) Find the 5-number summary for the males.

$$n=16 \quad \min = 7 \quad Q_1 = 8.75 \quad \text{med} = 10 \quad Q_3 = 10.25 \quad \max = 12.5$$

g) Create boxplots of the shoe sizes for both males and females. Put both plots on the same axis, one above the other (parallel boxplots).

Female

Male



h) Use the boxplots to write three statements comparing the shoe sizes for the two groups

- ① The max of the female sizes is below the median of the male sizes
- ② The median women's size is comparable to the male min size.
- ③ The spread of $Q_1 - Q_3$ is more consistent in male sizes.