Name:

5-a-day ACT prep #5

Solve each problem, show your work, and then choose the correct answer.

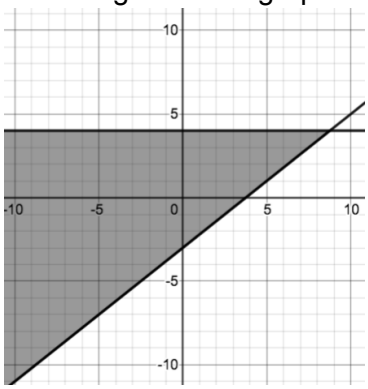
Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose, but some of the problems may best be done without using a calculator.

Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean.

1. Which of the following systems of inequalities is represented by the shaded region of the graph below?



A. $y \leq 4 \text{ and } y \leq \frac{4}{5}x - 3$

B. $y \leq 4 \text{ or } y \geq \frac{4}{5}x - 3$

C. $y \leq 4 \text{ and } y \geq \frac{4}{5}x - 3$

D. $y \geq 4 \text{ and } y \leq \frac{4}{5}x - 3$

E. $y \geq 4 \text{ or } y \leq \frac{4}{5}x - 3$

2. What two numbers should be placed in the blanks below so that the difference between consecutive numbers is the same?

14, _____, _____, 65

A. 29, 50
B. 30, 49
C. 31, 48
D. 32, 47
E. 33, 46

$65 - 14 = 51$

3 jumps

$\frac{51}{3} = 17$

$14 + 17 = 31$

3. What is $282.935 + 112.248$ rounded to the nearest tenth?

282.935
112.248
395.183

395.2

A. 395
B. 395.1
C. 395.18
D. 395.2
E. 400

4. What is the value of x in the equation $6x + 12 = 3(x - 1)$?

A. -5
B. $-\frac{13}{3}$
C. -1
D. 1
E. 3

$6x + 12 = 3x - 3$

$-3x \quad -3x$

$3x + 12 = -3$

$-12 \quad -12$

$3x = -15$

$x = -5$

5. Hanson bought a new e-bike for $2600. The value of the bike decreases by 11% each year. Which expression models the value of the bike $V(t)$ after t years?

A. $V(t) = 2600 - 11t$
B. $V(t) = 2600 - 0.11t$
C. $V(t) = 2600(0.11)^t$
D. $V(t) = 2600(0.89)^t$
E. $V(t) = 2600(1.11)^t$