Accelerated Coordinate Algebra

Benchmark 1 Please do not write on this test. Fall 2016

(MGSE9-12.A.REI.3)DOK 1 Solve each equation.

1) $-104 = -8k - 8(5 + k)$

A) $\{-7\}$ B) $\{-5\}$
C) $\{4\}$ D) $\{1\}$

2) $133 = 7(2x + 7)$

A) $\{-6\}$ B) $\{-15\}$
C) $\{6\}$ D) $\{10\}$

(MGSE9-12.A.REI.3) DOK 1 Solve each equation.

3) $-2 - 7a = a - 2$

A) { All real numbers. } B) $\{3\}$
C) $\{9\}$ D) $\{0\}$

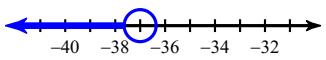
(MGSE9-12.A.REI.3) DOK 2

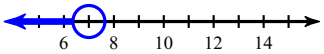
4) Which equation has no solution?

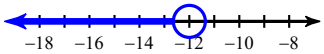
A) $3m - 10 = 2(4m - 5)$
B) $6 - 2m - 1 = 4m + 8 - 6m - 3$
C) $-14 + 4m = 1 - 4(4 - m)$
D) $-2m + 3 = 3 - 2m$

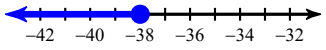
(MGSE9-12.A.REI.3) DOK 1 Solve each inequality and graph its solution.

5) $-98 < -7(6 + n) - 7$

A) $n < -37$:


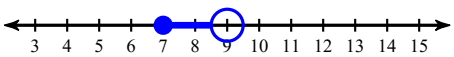
B) $n < 7$:


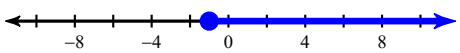
C) $n < -12$:


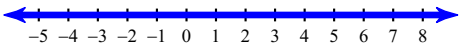
D) $n < -38$:


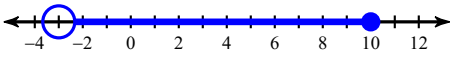
(MGSE9-12.A.REI.3) DOK 1 Solve each compound inequality and graph its solution.

6) $52 \le -4 + 8b < 68$

A) $7 \le b < 9$:


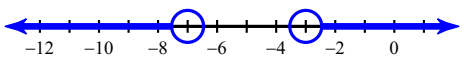
B) $b \ge -1$:


C) $-5 \le b < -1$:


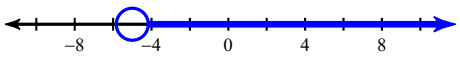
D) $-3 < b \le 10$:


7) $6x + 6 < -12$ or $2x - 10 \geq 8$

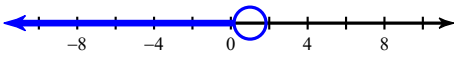
A) $x > -3$ or $x < -7$:



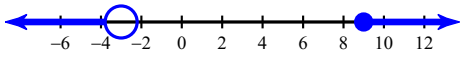
B) $x > -5$:



C) $x < 1$:



D) $x < -3$ or $x \geq 9$:



(MGSE9-12.A.REI.6) DOK 2 Solve each system by substitution or elimination.

8) $6x + y = 10$
$-18x - 3y = -30$

A) $(-7, 5)$
B) Infinite number of solutions
C) $(-5, -1)$
D) $(-7, -5)$

9) Norachai and Kathryn are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Norachai sold 8 small boxes of oranges and 7 large boxes of oranges for a total of $132. Kathryn sold 4 small boxes of oranges and 9 large boxes of oranges for a total of $132. Find the cost each of one small box of oranges and one large box of oranges.

A) small box of oranges: $3, large box of oranges: $15
B) small box of oranges: $6, large box of oranges: $12
C) small box of oranges: $5, large box of oranges: $11
D) small box of oranges: $7, large box of oranges: $10

(MGSE9-12.F.IF.6) DOK 1

10) Which linear equation has a slope of $-\frac{6}{5}$?

A) $5x + 6y = -10$ B) $5x - 6y = -10$
C) $-5x + 6y = -10$ D) $6x + 5y = -10$

(MGSE9-12.N.Q.1) DOK 2

11) A giraffe can run 32 miles per hour. What is the speed in feet per second? Round your answer to the nearest tenth.

A) 46.9 ft/ s B) 44.4 ft/ s C) 15.6 ft/s D) 51.7 ft/s

(MGSE9-12.A.CED.1, MCC9-12.N.Q.1) DOK 1 Solve each proportion.

12) $\frac{9}{2} = \frac{r-8}{4}$

A) $\{-10\}$ B) $\{5.4\}$
C) $\{26\}$ D) $\{2.9\}$

(MGSE9-12.F.IF.6) DOK 2 Write the slope-intercept form of the equation of the line through the given point with the given slope.

13) through: $(3, 1)$, slope = undefined

A) $y = -3x$ B) $x = 3$
C) $y = 3x$ D) $y = -3$

(MGSE9-12.A.CED.4) DOK 1

14) Solve $C = 2\pi r$ for r.

A) $r = \frac{\pi C}{2}$ B) $r = \frac{2C}{\pi}$
C) $r = \frac{C}{2\pi}$ D) $r = \frac{2\pi}{C}$

(MGSE9-12.A.CED.1, MGSE9-12.N.Q.1) DOK 1

15) A utility worker is 5.5 feet tall and is casting a shadow 4 feet long. At the same time, a nearby utility pole casts a shadow 20 feet long. Find the height of the utility pole.

A) 1.1 feet B) 25.5 feet C) 27.5 feet D) 14.5 feet

(MGSE9-12.A.CED.1) DOK 2

16) A red kite is 100 feet off the ground and is rising at 8 feet per second. A blue kite is 180 feet off the ground and is rising at 5 feet per second. How long will it take for the red kite to be higher than the blue kite? Round your answer to the nearest second.

A) 94 seconds B) 27 seconds C) 22 seconds D) 6 seconds

(MGSE9-12.A.CED.1, MCC9-12.N.Q.1) DOK 2

17) A rectangle has an area of 48 in^2. Every dimension of the rectangle is multiplied by a scale factor and the new rectangle has an area of 12 in^2. What was the scale factor?

A) 4 B) 2 C) $\frac{1}{2}$ D) $\frac{1}{4}$

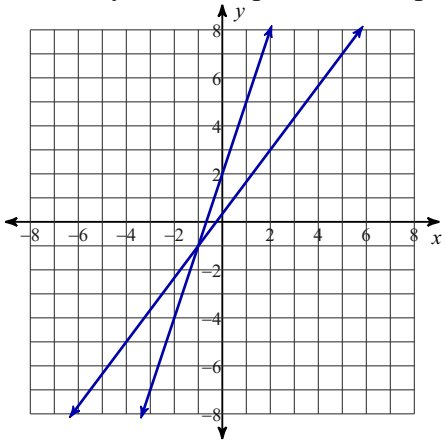
18) A student made a mistake in solving the inequality below. In complete sentences, identify the step in which the error occured. Then explain how the problem should have been solved.

Step 1: $3x - 12 > 5x + 2$
Step 2: $-5x \quad -5x$
Step 3: $-2x - 12 > 2$
Step 4: $+ 12 \quad +12$
Step 5: $-2x > 14$
Step 6: $x > -7$

A) Step4; The student should have multiplied both sides by 12
B) Step 6; The student did not flip the inequality sign when dividing by a negative number
C) Step 6; The student did not flip the inequality sign when subtracting by a negative number
D) Step 4; The student should have subtracted 12 from each side

(MGSE9.12.A.REI.6) DOK 2

19) Which system of equations is represented by the graph?



A) $4x - 3y = -1$
$3x - y = -2$

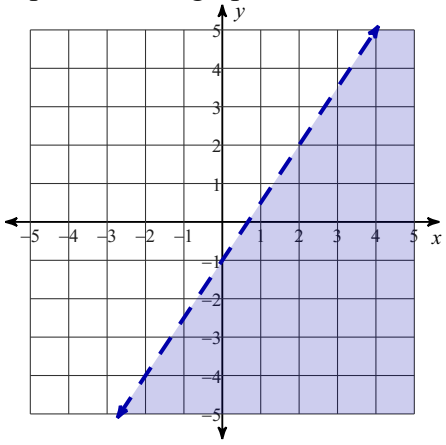
B) $x + 3y = 15$
$2x - 3y = 6$

C) $x + y = 1$
$2x + y = 3$

D) $-2x + 5y = -1$
$3x + 2y = 11$

(MGSE9-12.A.REI.12) DOK 2

20) Which of the following inequalities represents the graph below?



A) $3x + 2y < 2$
B) $3x + 2y > 2$
C) $3x - 2y > 2$
D) $3x - 2y < 2$

Answers to Benchmark 1 Please do not write on this test. Fall 20

1) C
2) C
3) D
4) C
5) B
6) A
7) D
8) B
9) B
10) D
11) A
12) C
13) B
14) C
15) C
16) B
17) C
18) B
19) A
20) C