

Number System and Equations Review

Student _____

1. Which equation has an infinite number of solutions?

- A. $12 = 3y$
- B. $8q + 5 = 21$
- C. $2x + 7 - 2x = 7$
- D. $4p - 4 = 4p + 4$

2. Four students each wrote an equation.

| Student Equations | |
|-------------------|-------------------|
| Student | Equation |
| Beto | $3m = 3m + 5$ |
| Lila | $9r + 4 = 4 + 9r$ |
| Mark | $6 - n = -n + 2$ |
| Wanda | $8u - 2 = 2u + 8$ |

Which two students wrote equations that have no solution?

- A. Beto and Wanda
 - B. Beto and Mark
 - C. Lila and Wanda
 - D. Lila and Mark
3. Part A How many solutions does the equation $3x + 6 = 9(x + 4)$ have? What are the solutions? Show or explain your work.
- Part B In the equation $3x + c = 3x + d$ what must be true for c and d so that the equation has an infinite number of solutions? Explain your answer.

4. Which equation is equivalent to $4x + 2(3x - 2) = 10$?

- A. $6x = 10$
- B. $8x = 20$
- C. $10x - 4 = 10$
- D. $10x - 2 = 10$

5. Which equation is equivalent to $-6(y - 3) = 2(3x + 7)$?

- A. $-6y - 3 = 6x + 7$
- B. $-6y + 3 = 6x + 7$
- C. $-6y - 18 = 6x + 14$
- D. $-6y + 18 = 6x + 14$

6. The average high temperature in Valerie's city during the month of December is 50°F . Using the formula

$$F = \frac{9}{5}C + 32,$$

what is C , the average high temperature in degrees Celsius?

- A. 10°C
- B. 32.4°C
- C. 45.5°C
- D. 122°C

7. Which set of numbers only contains rational numbers?

- A. $\left\{\frac{1}{2}, \frac{2}{3}, \sqrt{3}\right\}$
- B. $\{0, 4, \sqrt{9}\}$
- C. $\{5, \sqrt{6}, 7\}$

8. Which list shows the fractions shown below, in order from least to greatest?

$$\frac{21}{495}, \frac{220}{4909}, \frac{19}{441}$$

A. $\frac{19}{441}, \frac{21}{495}, \frac{220}{4909}$

B. $\frac{21}{495}, \frac{19}{441}, \frac{220}{4909}$

C. $\frac{21}{495}, \frac{220}{4909}, \frac{19}{441}$

D. $\frac{220}{4909}, \frac{21}{495}, \frac{19}{441}$

9. Which choice is an example of an irrational number?

A. $\frac{16}{7}$

B. $2.\bar{5}$

C. $\sqrt[3]{24}$

D. $\sqrt{49}$

10. The value of $\sqrt{63}$ is between what two numbers?

A. 62 and 64

B. 31 and 32

C. 7 and 8

D. 3 and 4

11. Which shows the numbers in order from least to greatest?

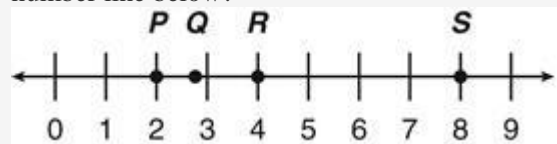
A. $\frac{22}{7}, 200\%, \frac{5}{3}, \sqrt{2}$

B. $\frac{5}{3}, 200\%, \frac{22}{7}, \sqrt{2}$

C. $\sqrt{2}, \frac{5}{3}, \frac{22}{7}, 200\%$

D. $\sqrt{2}, \frac{5}{3}, 200\%, \frac{22}{7}$

12. Which point most closely corresponds to $\sqrt{8}$ on the number line below?



A. P

B. Q

C. R

D. S