Class Name : **MATH 1050/1051 Fall 2018**

Instructor Name : **Nguyen**

Student Name : _____

Instructor Note :

1. Gabrielle's age is two times Mikhail's age. The sum of their ages is 87. What is Mikhail's age?

2. Jose's gas tank is $\frac{1}{2}$ full. After he buys 7 gallons of gas, it is $\frac{3}{4}$ full. How many gallons can Jose's tank hold?

3. Solve for x.

$$2\left|x\right| = -18$$

4. Solve for w.

$$\left|6w + 12\right| = 0$$

5. A long distance runner starts at the beginning of a trail and runs at a rate of 6 miles per hour. One hour later, a cyclist starts at the beginning of the trail and travels at a rate of 14 miles per hour. What is the amount of time that the cyclist travels before overtaking the runner?

Do not do any rounding.

☐ hours

6. Solve for y.

$$\left|2y + 6\right| = \left|2y - 4\right|$$

7. The sets E and G are given below.

$$E = \{0, 1, 3, 4\}$$
$$G = \{0, 1, 2, 3, 8\}$$

Find the intersection of E and G.

Find the union of E and G.

Write your answers using set notation (in roster form).

8. B and C are sets of real numbers defined as follows.

$$B = \{z \mid z < 4\}$$

$$C = \{z \mid z \leq 8\}$$

Write $B \cap C$ and $B \cup C$ using interval notation.

If the set is empty, write $\varnothing$.

9. Solve the compound inequality.

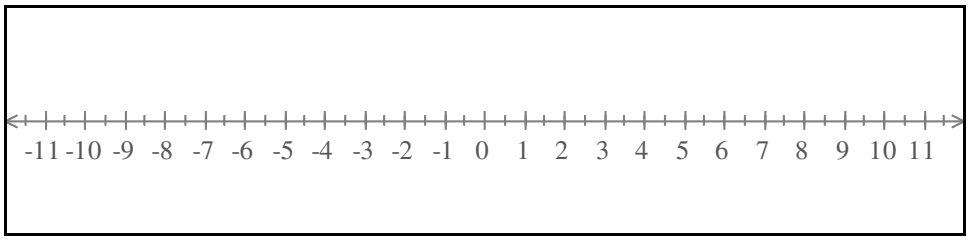
$$2w + 1 \geq 7 \quad \text{or} \quad 3w - 2 \leq -8$$

Write the solution in interval notation.

If there is no solution, enter $\varnothing$.

10. Graph the solution to the inequality on the number line.

$$|w + 2| \geq 6$$



11. Solve for u, where u is a real number.

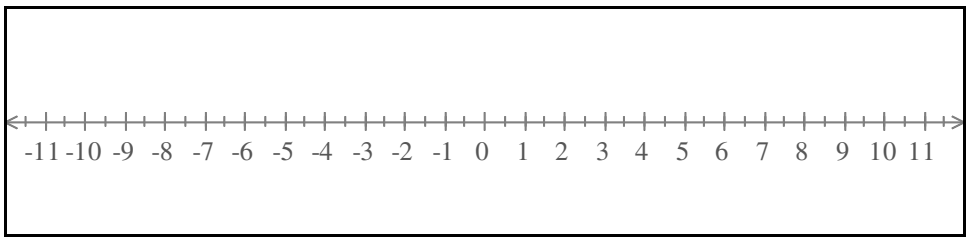
$$\sqrt{-23 + 9u} = u - 1$$

12. Solve for x, where x is a real number.

$$\sqrt{x+16}-5=2$$

13. Graph the solution to the inequality on the number line.

$$\left|2y-14\right|<6$$



14. Solve.

$$6\left|v-3\right|+7<43$$

15. Solve for u.

$$\frac{2}{u-5}=\frac{6}{3u-15}-4$$

16. Solve for y, where y is a real number.

$$y^{\frac{1}{3}}=-2$$

17. In a race, Car #1 went an average of 155 miles per hour for x hours before dropping out. Car #2 went an average of 170 miles per hour for y hours before dropping out.

The distance Car #1 travelled was at least that of Car #2. Using the values and variables given, write an inequality describing this.

18. Solve for u.

$$u^2 - 8u + 12 = 0$$

19. Solve for y, where y is a real number.

$$\sqrt[3]{2y+7} + 2 = 3$$

20. Solve for y, where y is a real number.

$$\sqrt[4]{y} = 2$$

Obj. 4 #5 Answers for class MATH 1050/1051 Fall 2018

1. 29 years old

2. 28 gallons

3. No solution

4. $w = -2$

5. 0.75 hours

6. $y = -\frac{1}{2}$

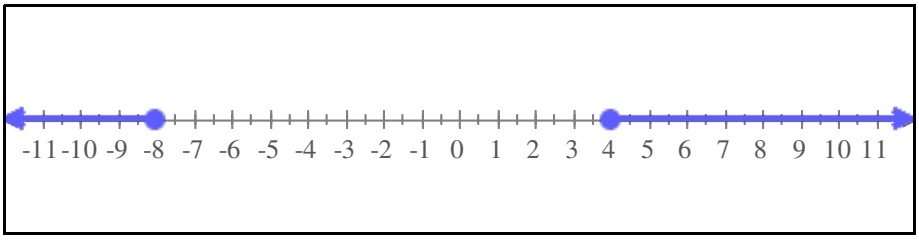
7. $E \cap G = \{0, 1, 3\}$
$E \cup G = \{0, 1, 2, 3, 4, 8\}$

8. $B \cap C = (-\infty, 4)$

$B \cup C = (-\infty, 8]$

9. $(-\infty, -2] \cup [3, \infty)$

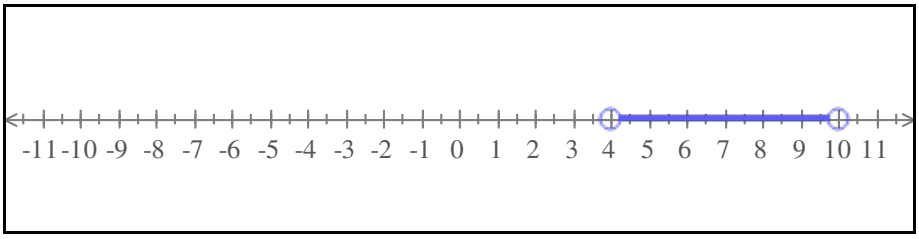
10.



11. $u = 3,\ 8$

12. $x = 33$

13.



14. $-3 < v < 9$

15. No solution

16. $y = -8$

17. $155x \geq 170y$

18. $u = 2,\ 6$

19. $y = -3$

20. $y = 16$