

# Honors Algebra 1 Summer Assignment (2023-2024)

Name \_\_\_\_\_

Date \_\_\_\_\_

Dear Honors Algebra 1 Student,

Welcome to UHS! Your summer assignment consists of problems preparing you for the first chapter in our Honors Algebra 1 book. You are to complete the entire assignment by the first full day of school (meaning you don't have to bring it on freshman orientation). I will be collecting it then. You can reach me at [kdugan@youngstowndiocese.org](mailto:kdugan@youngstowndiocese.org) if you have any questions, I would be happy to help. I hope you have a great summer and I look forward to meeting you!

Sincerely,

Mrs. Dugan

## Directions:

- Please complete the following without a calculator.
- Show and LABEL all of your work on *separate sheet of paper* if you cannot fit on this sheet.
- CIRCLE your answers on your work page.
- Record your answers on the answer line provided.
- Be sure to *read* the instructions carefully and answer *all* parts of the question.

## Answers

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

## Evaluate the expression.

1.  $12 - q$  when  $q = -8$

2.  $3x$  when  $x = 9$

3.  $w^4$  when  $w = -2$

4.  $\frac{24}{t}$  when  $t = 4$

5.  $34.5x$  when  $x = 4$

6.  $\frac{1}{3}y$  when  $y = \frac{9}{10}$

7.  $\left(\frac{1}{2}\right)^5$

8.  $\frac{x}{y}$  when  $x = 6$  and  $y = \frac{1}{2}$

## Write the power as a product.

9.  $10^4$

10.  $(2.6)^3$

11.  $-3^6$

12.  $(-4)^2$

13.  $-(2)^4$

14.  $1^7$

15. The height of a horse is often measured in hands. You can estimate the height (in inches) of a horse by using the expression  $4h$ , where  $h$  is the number of hands. How tall is a horse that measures 14 hands?

**Evaluate the expression.**

16.  $3[15 - (2^3 - 6)^2]$

17.  $15 - 7 \cdot 2$

18.  $2 + 2^3 \div 4$

19.  $5(3^2 - 4)$

20.  $16 \div (4 - 2) - 3$

21.  $\frac{(37 - 26)^2 - 6}{32 \div 2^2 - (4^2 - 13)}$

*Answers*

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

21. \_\_\_\_\_

**Translate the verbal phrase into an algebraic expression.**

22. The sum of a number  $x$  and 9

23. Six less than a number  $w$  squared

22. \_\_\_\_\_

23. \_\_\_\_\_

**Write an equation or an inequality.**

24. Three more than twice a number  $b$  is equal to 13.

25. The product of 5 and a number  $k$  is less than 60.

24. \_\_\_\_\_

25. \_\_\_\_\_

**Evaluate the expression for the given values of the variables.**

26.  $3m - n$  when  $m = 5$  and  $n = 4$

27.  $2u^2 + v$  when  $u = 3$  and  $v = 7$

26. \_\_\_\_\_

27. \_\_\_\_\_

**Check whether the given number is a solution of the equation or the inequality.**

28.  $4y - 1 \geq 20$ ; 4

29.  $4a - 7 = 3a - 4$ ; 3

28. \_\_\_\_\_

29. \_\_\_\_\_

30. A bicycle travels at an average speed of 15 miles per hour.  
How many miles does the bicycle travel in 1.5 hours?

30. \_\_\_\_\_

*Answers*

Perform the indicated operation. Write the answer with the correct number of significant digits.

31.  $68.7 \text{ m} - 12.45 \text{ m}$

32.  $34.12 \text{ in.} \times 2.4 \text{ in.}$

31. \_\_\_\_\_

32. \_\_\_\_\_

Choose the more precise measurement.

33. 32.5 lb; 28.35 lb

34. 82.1 mm; 48.3 cm

33. \_\_\_\_\_

34. \_\_\_\_\_

Tell whether the table is a function.

35.

Input	Output
0	3
5	7
10	7
15	11

36.

Input	Output
1	12
2	6
2	3
3	1.5

35. \_\_\_\_\_

36. \_\_\_\_\_

Make a table for the function. Identify the range of the function.

37.  $y = 2x + 1$

Domain: 0, 1, 2, 3

Input, $x$				
Output, $y$				

37. \_\_\_\_\_

38. \_\_\_\_\_

38.  $y = 20 - 3x$

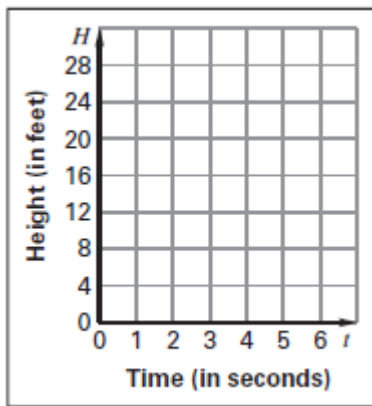
Domain: 0, 2, 4, 6

Input, $x$				
Output, $y$				

*Answers*

39. The table shows the height  $H$  (in feet) of an object as a function of the time  $t$  (in seconds) after being thrown vertically upward. Graph the function.

<b>Time elapsed, <math>t</math></b>	0	1	2	3	4	5
<b>Height, <math>H</math></b>	6	23	28	24	18	13

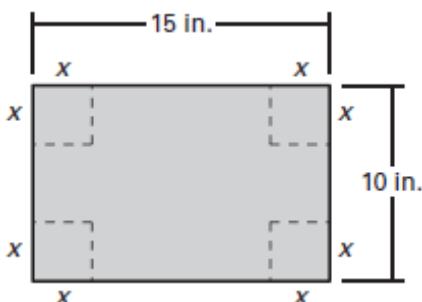


39. \_\_\_\_\_

40. \_\_\_\_\_

40. You can convert temperatures in degrees Fahrenheit to degrees Celsius by using the expression  $\frac{9}{5}C + 32$ , where  $C$  is the temperature (in degrees Celsius). Convert  $35^{\circ}\text{C}$  to degrees Fahrenheit.

41. A rectangular box is created by cutting out squares of equal sides of lengths  $x$  from a piece of cardboard 10 inches by 15 inches and folding up the sides as shown in the figure. The volume of the box is given by  $V = x(10 - 2x)(15 - 2x)$ . Find the volume of the box when the side length of the square is 3 inches.



41. \_\_\_\_\_

42. A carpet outlet advertises a price of \$470.40 to carpet a 12-foot by 16-foot room. If a customer was given a price of \$725.20 for carpeting a room that is 16 feet wide, what is the length of the room?

*Answers*

42. \_\_\_\_\_

**Find the range of the function. Then graph the function.**

43.  $y = \frac{1}{2}x + 3$

44.  $y = x - 6$

43. \_\_\_\_\_

Domain: 0, 1, 2, 3, 4

Domain: 10, 12, 14, 16, 18

44. \_\_\_\_\_

