

Chapter 2 Review Sheet

1. Find the domain and range, then determine whether the relation is a function:

$$\{(-2, -1), (-3, -4), (1, -1), (3, 0)\}$$

[A]  $D = \{-4, -1, 0\}$ ,  $R = \{-3, -2, 1, 3\}$ ; yes

[B]  $D = \{-3, -2, 1, 3\}$ ,  $R = \{-4, -1, 0\}$ ; yes

[C]  $D = \{-3, -2, 1, 3\}$ ,  $R = \{-4, -1, 0\}$ ; no

[D]  $D = \{-4, -1, 0\}$ ,  $R = \{-3, -2, 1, 3\}$ ; no

2. Graph the equation and find the range and domain, then determine whether the equation is a function:

$$y = -x^2 + 6$$

3. Find  $f(-3)$  if  $f(x) = -3x^2 + 4x + 7$ .

[A] 16      [B] 4      [C] -39      [D] -32

4. Which of the following functions is linear?

[A]  $j(x) = 7x + 12$       [B]  $h(x) = \sqrt{2x} + 5$

[C]  $f(x) = \frac{1}{5x} - 4$       [D]  $f(x) = 9x^2 - 7x + 5$

5. Which shows the equation in standard form?

$$\frac{1}{4}x = 7y + 4$$

[A]  $x - 28y = 4$       [B]  $y = \frac{1}{28}x - \frac{4}{7}$

[C]  $y = x - \frac{4}{7}$       [D]  $x - 28y = 16$

6. Graph the equation by determining its  $x$ - and  $y$ -intercepts:  $3x - 5y = -15$

Find the slope of the line that passes through the pair of points:

7.  $(-8, 7)$ ,  $(6, -6)$

[A]  $-\frac{4}{5}$       [B]  $-\frac{13}{14}$       [C]  $-\frac{5}{4}$       [D]  $-\frac{14}{13}$

8.  $(9, 3)$ ,  $(-6, 5.5)$

[A]  $-\frac{1}{6}$       [B]  $-\frac{12}{23}$       [C]  $-6$       [D]  $-\frac{23}{12}$

9. Find an equation of a line that passes through the points  $(-1, -2)$  and  $(-3, 1)$ .

10. Find an equation of a line that passes through the points  $(-2, -4)$  and  $(1, 8)$ .

Find the equation of the line that passes through the given point with the given slope:

11.  $(-2, -3)$ ,  $m = -4$

[A]  $y = -4x - 11$       [B]  $y = -4x + 11$

[C]  $y = 4x + 11$       [D]  $y = 4x - 11$

12.  $(-5, 2)$ ,  $m = 3$

13. Write the equation, in slope-intercept form, of the line that passes through the given point with the given slope:  $(-2, -5)$ ,  $m = -3$

14. Find the equation of the line that satisfies the set of conditions:  
passes through  $(-1, 2)$ , parallel to the line  $y = 2x - 5$

15. Write the equation of the line that satisfies the set of conditions:  
passes through  $(2, -4)$ , parallel to the line  
 $y = -6x + 2$

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16. Find the equation of the line that satisfies the set of conditions:

passes through  $(-3, -1)$ , perpendicular to the line  $y = -\frac{1}{5}x - 1$

17. Write the equation of the line that satisfies the set of conditions:

passes through  $(0, 7)$ , perpendicular to the line  $12x - 2y = 8$

18. The National Physical Fitness Award qualifying standards list the following times for the one-mile run.

- Find a the prediction equation that models this data. Do not round your equation.
- Predict the time for a 16-year-old to run one-mile. (Round to the nearest tenth)
- According to the model, how much has the time decrease each age level? (Round to the nearest tenth)

Age	6	7	8	9	10	11	12
Time (min)	12.4	11.7	11.1	10.5	9.8	9.3	8.7

Graph the function and identify the domain and range:

19.  $y = |x - 4|$

20.  $y = \lceil x + 2 \rceil$

Graph the inequality:

21.  $4x - y \geq -4$

22.  $x + 2y \geq 2$