

Chapter 1 Review

Given A (-1, 6), B(9, 2)

1. Find the length of \overline{AB} .

2. Find the midpoint of \overline{AB} .

3. Find the standard form equation of line AB.

4. Find a standard form equation of the perpendicular bisector of the line segment connecting (6, 4) and (-2, 12)

5. Find a slope-intercept form equation of the line containing (-3, 9) and parallel to the line containing (1, 5) and (-7, 10).

6. Write a standard form equation of the line with x-intercept of -5 and y-intercept of 6.

7. Find the vertex of $y = 9x^2 + 30x + 25$

8. Find the axis of symmetry of $y = 4x^2 - 16x + 16$.

9. Simplify i^{711}

10. Simplify i^{-71}

11. Simplify $(5 + 3i)^2$

12. Simplify: $\frac{3 + 4i}{2 - 5i}$

13. Solve simultaneously.
$$\begin{aligned} 2x - 5y &= 1 \\ 3x - 4y &= -2 \end{aligned}$$

14. Solve $\sqrt{x^2 + 5} = x + 3$

15. Solve $12x^2 - 3x = 36$

16. Find an equation of a quadratic function where $f(1) = 7$ and the minimum value is $f(6) = 2$

17. Find the linear function $f(x)$ if $f(2) = 5$ and $f(7) = 1$

18. Sketch the graph of the parabola $y = -2(x - 3)^2 + 2$. Label the vertex, axis of symmetry and the intercepts.

19. Graph $y = x^2 - 5x + 6$

20. Solve: $x + y = 2$
 $y = x^2 + x - 6$

21. Use the values of $f(1) = 3, f(2) = 5, f(3) = 9$ to find an equation of the form $f(x) = ax^2 + bx + c$.

22. Graph $3x - 5y = 10$

23. Graph $y = -4$

Answers:

1. $2\sqrt{29}$

2. (4, 4)

3. $2x + 5y = 28$

4. $x - y = -6$

5. $y = -\frac{5}{8}x + \frac{57}{8}$

6. $6x - 5y = -30$

7. $\left(\frac{-5}{3}, 0\right)$

8. $x = 2$

9. $-i$

10. i

11. $16 + 30i$

12. $\frac{-14}{29} + \frac{23}{29}i$

13. (-2, -1)

14. $x = \frac{-2}{3}$

15. $\frac{1 \pm \sqrt{193}}{8}$

16. $f(x) = \frac{1}{5}(x - 6)^2 + 2$

17. $f(x) = -\frac{4}{5}x + \frac{33}{5}$

18. vertex (3, 2); y-int = -16; AOS: $x = 3$; opens down

19. parabola; x int: (2,0) and (3,0); AOS $x = 2.5$; vertex ((2.5, -0.25), opens up

20. (-4,6) ; (2,0)

21. $f(x) = x^2 - x + 3$

22. $y = \frac{3}{5}x - 2$ $m = 3/5$ and $b = -2$

23. Horizontal line that intersects the y axis at -4