**Sketch the line through A and B, and find its slope m.**

1. A(-3, 2), B(5, -4) 2. A(2, 5), B(-7, 5) 3. A(-3, 2), B(-3, 5)



**Use slopes to show that the points are vertices of the specified polygon.**

4. A(-3, 1), B(5, 3), C(3, 0), D(-5, -2); parallelogram



5. A(6, 15), B(11, 12), C(-1, -8), D(-6, -5); rectangle



6. If three consecutive vertices of a parallelogram are A(-1, -3), B(4, 2), and C(-7, 5), find the fourth vertex.



7. **Sketch the graph of y=mx for the given values of m.**

m = 3, -2, 2/3, -1/4



8. **Sketch the graph of the line through P for each value of m.**

P(3, 1); m = ½, -1, -1/5

9. **Sketch the graphs of the lines on the same coordinate plane.**

y = x + 3, y = x + 1, y = -x + 1

10. **Find a general form of an equation of the line through the point A that satisfies the given condition.**

A(5, -2) (a) parallel to the y-axis (b) perpendicular to the y-axis

11. A(5, -3); slope -4 12. A(4, 0); slope -3 13. A(4, -5); through B(-3, 6)

14. A(2, -4); parallel to the line 5x – 2y = 4 15. A(7, -3); perpendicular to the line 2x – 5y = 8

**Find the slope-intercept form of the line that satisfies the given conditions.**

16. x-intercept 4, y-intercept -3 17. through A(5,2) and B(-1, 4)

**Find a general form of an equation for the perpendicular bisector of the segment AB.**

18. A(3, -1), B(-2, 6)

**Find an equation for the line that bisects the given quadrants.**

19. II and IV

**Use the slope-intercept form to find the slope and y-intercept of the given line, and sketch its graph.**

20. 2x = 15 – 3y 21. 4x – 3y = 9

**Find an equation of the line shown in the figure.**

22. (a) (b) m = -1/2 (c) m = -3/2 (d) m = -1



(3, -2)

23. **Find an equation of the circle that has its center C(3, -2) and is tangent to the line y = 5.**

24. Suppose a major league baseball player has hit 5 more home runs in the first 14 games, and he keeps up this pace throughout the 162-game season.

(a) Express the number of y home runs in terms of the number of x games played.

(b) How many home runs will the player hit for the season?

25. A baby weighs 10 pounds at birth, and three years later the child’s weight is 30 pounds. Assume that childhood weight W (in pounds) is linearly related to age t (in years).

(a) Express W in terms of t.

(b) What is W on the child’s sixth birthday?

(c) At what age will the child weigh 70 pounds?

26. A college student receives an interest-free loan of $8250 from a relative. The student will repay $125 per month until the loan is paid off.

(a) Express the amount P (in dollars) remaining to be paid in terms of time t (in months).

(b) After how many months will the student owe $5000?