Review #2

Precalculus Review Worksheet #2

Name_____ Date_____ Per_____

Find the slope of the line that passes through the following points.

1. $(-1, 3)\ and (5, 9)$

2. $(-1, -2)\ and (4, 5)$

3. Find the equation in point-slope form. General form and slope-intercept form, for the line through the point $(2, -1)$ with slope $m = -\frac{2}{3}$.

point-slope form _____

standard form _____

slope-intercept form _____

Find the equation in point-slope form and slope-intercept from for the line.

4. The line through points (-1, -4) and (3, 2).

5. The line through (-2, 4) with a slope $m = 0$.

Find the equation in slope-intercept form for the line.

6. The line $3x - 4y = 7$.

7. The line through $(2, -3)$ and parallel to the line $2x + 5y = 3$.

8. The line through $(2, -3)$ and perpendicular to the line $2x + 5y = 3$.

9. The SAT scores are measured on an 800-point scale. The data below shows the average SAT math score for several years.

Year	SAT Math Score
1995	506
1997	511
1998	512
1999	511
2000	514
2001	514
2002	516
2003	519
2004	518

a.) Use the 1995 and 2000 data to write a linear equation for the average SAT math score y in terms of x.

b.) Use the equation in (a) to estimate the average SAT score in 1996. Compare with the actual value of 508.

c.) Use the equation to predict the average SAT score in 2006.

Solve the equations algebraically.

11. $8x - 5 = 6x$

12. $\frac{x-2}{3} + \frac{x+5}{2} = \frac{1}{3}$

13. $2(5 - 2y) - 3(1 - y) = y + 1$

14. $3(3x - 1)^2 = 21$

15. $x^2 - 4x - 3 = 0$

16. $6x^2 + 9x = 0$

Solve the equations algebraically.

17. $|x| = 9$

18. $|4x + 1| = 3$

19. $x^2 - 2x + 4 = 0$

20. $2x - 4 = \frac{4x-5}{3}$

Solve the inequality and draw a number line graph of the solution.

21. $-3x + 8 \geq 17$

22. $\frac{5x+7}{4} \leq -3$

23. $5x + 1 < 2x - 4$

24. $\frac{3-4x}{6} - \frac{2x-3}{8} \leq 2 - x$

25. $-2 < x + 4 \leq 7$

26. $-1 < 3x - 2 < 7$

Solve the inequality.

27. $|2x - 5| < 7$

28. $\left|\frac{x+7}{5}\right| \geq 2$

Perform the indicated operation.

29. $(3 - 2i) + (-2 + 5i)$

30. $(5 - 7i) - (3 - 2i)$

31. $(4 - 2i)(-6 + 5i)$

32. $(1 - 2i)^2$

33. $\sqrt{-16}$

34. $\sqrt{-72}$

35. $5\sqrt{-18}$

36. $\frac{4 \pm \sqrt{-18}}{2}$

37. $\frac{3 \pm \sqrt{-45}}{6}$

38. $\frac{3 \pm \sqrt{-16}}{6}$

39. A projectile is launched straight up from the ground with an initial velocity of 320 ft/sec.

a.) Write an equation that represents the height of the projectile in terms of time. Remember: $h(t) = -16t^2 + v_0 t + h_0$, where v_0=the initial velocity and h_0=the initial height.

b.) When will the projectile's height above the ground be at 245 ft.? Round to the nearest foot.

c.) When will the projectile's height above the ground be at the most 1538 ft.? Round to the nearest foot.

d.) When will the projectile's height above the ground be greater than or equal to 1538 ft.? Round to the nearest foot.

40. A jet airplane climbs at takeoff with a slope of $m = \frac{4}{9}$. How far in the horizontal direction will the airplane fly to reach an altitude of 20,000 ft. above the takeoff point?