Algebra CP   Review for Final #1

Evaluate the expression:

1. $c^2 - b^2$ when b = 5 and c = 10   2. $2m^4 - m^3n + 5$ when m = -1 and n = -6

Simplify the expression:

3. $-5(10^2 \div 6^0) + (2^2)(2^4)$ 4. $(m^{-3})(m^5)$ 5. $(a^2b^4)^3$

6. $\dfrac{2x^2y}{8xy^3}$ 7. $\sqrt{56}$ 8. $\sqrt{44} + \sqrt{99}$

9. $3\sqrt{5} + 4\sqrt{5}$ 10. $(7c+1)^2$ 11. $u^2(3u + 1)(5u - 4)$

12. $\dfrac{12}{3+\sqrt{5}}$ 13. $3\sqrt{\dfrac{1}{4}}$ 14. $\dfrac{3}{\sqrt{2}}$

Solve the equation:

15. $-7(x - 4) = 8 - 2x$ 16. $\dfrac{3}{4}(4x - 12) = 5x - 1 - 2x$ 17. $|3x - 7| = 8$

18. $5x^2 - 4 = 16$ 19. $x^2 - 9x + 20 = 0$ 20. $3x^2 - 11x - 4 = 0$

21. $\dfrac{9}{10} = \dfrac{x}{48}$ 22. $\dfrac{r-5}{4} = \dfrac{r+1}{6}$ 23. $5(x - 4) + 6 = 10x - 4$

Solve the inequality:

24. $\dfrac{m}{5} - 1 \geq -8$ 25. $9 - 3x < 4(-x + 1)$ 26. $16 \leq -2x$

27. $|9 + y| > 4$ 28. $-5 < \dfrac{x}{2} \leq 7$ 29. $|x - 2| \leq 3$

Find the x- and y-intercepts of the equation:

30. $-4x + y = -14$ 31. $8x + 40 = 10y$

Write an equation in slope-intercept form of the line that passes through the given points:

32.   (2, 13) and (-1, -2)   33.   (4, -4) and (1, 5)   34.   (-3, 3) and (3, -3)

Write an equation that is parallel to the given line and passes through the given point:

35.   y = 4x + 6   (4, -2)   36.   y = -3x + 9   (3, -2)

Write an equation that is perpendicular to the given line and passes through the given point:

37. $y = \dfrac{1}{2}x + 2$ (4, 5)   38.   y = -3x + 3   (3, 2)

Simplify the expression. Remember, no negative exponents in final answers!

39. $\dfrac{mn^{-9}m^{30}}{m^0m^{23}}$

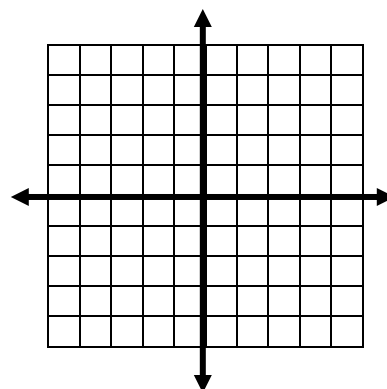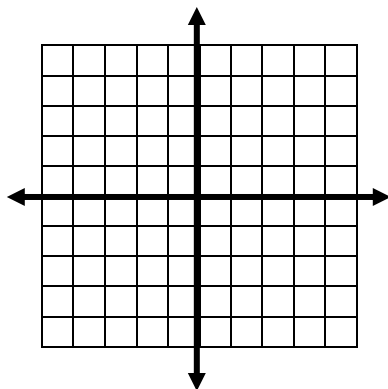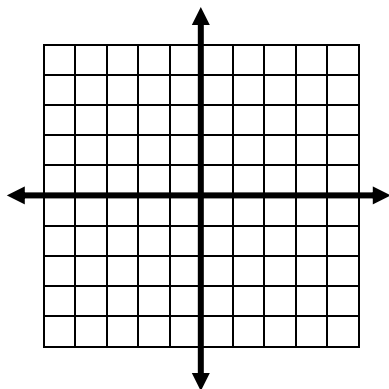40. $\dfrac{6r^3s^{-12}}{12r^{-9}} \bullet \dfrac{9r^6}{24s^{-18}}$

41. $x^6 \bullet \dfrac{6}{(xy)^{-3}}$

Graph the equation:

42. $4x - 2y = 8$
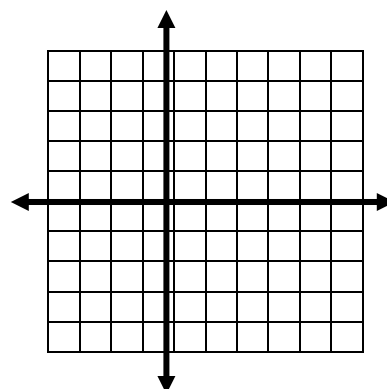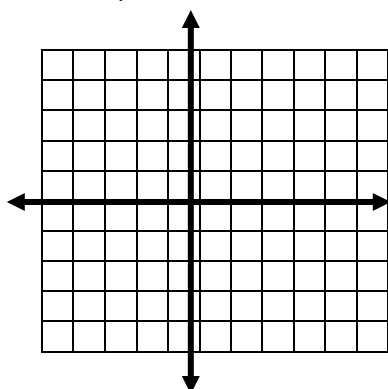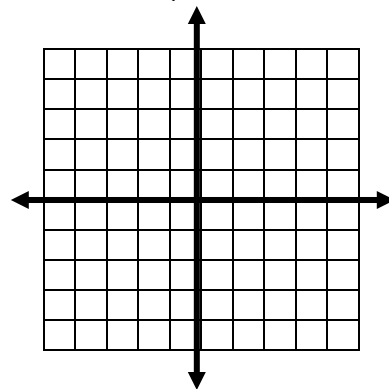
43. $y = x^2 - 4x + 4$

44. $y = -4$

Graph the inequality:

45. $3x + y < -2$

46. $y \geq -x - 2$

47. $x < 3$

Write "Let" statements, a verbal model, an equation, and solve:

48. Mrs. Craig and Mrs. Young both left Sycamore Canyon School at the same time heading in opposite directions. Mrs. Craig traveled north going 65 mph while Mrs. Young traveled south going 60 mph. How long were they driving before they were 625 miles apart?

49. Mr. Hedin left school, driving toward San Francisco at 45 mph. One hour later, Mrs. Moncourtois noticed he had forgotten his cell phone and drove along the same road at 60 mph to try to catch up with him. How long did it take Mrs. Moncourtois to overtake Mr. Hedin?

50. Jolly Ranchers worth $2.35 a pound were mixed with M&Ms worth $4.15 a pound. How many pounds of each candy did the mix contain if 5 lbs of the mixture is worth $17.15?