Word Problems: Systems

Algebra

Word Problems Practice: Money problems.
Write a system of equations and solve:

1. Anna has a pocket of dimes and quarters. If she has 10 coins worth $1.45, how many of her coins are quarters?

2. Popsicles cost $0.80, and ice-cream cups cost $0.65. If you purchased 9 items for $6.15, how many of the items were popsicles.

Word Problems Practice: Sum/Difference
Write a system of equations and solve:

1. The sum of two integers is 19 and their difference is 10. What is the smaller of the two integers?

2. If I add Mark's age to Tammy's age, I get 39. If I subtract Mark's age from Tammy's age, I get negative 7. What will I get if I multiply Mark's age by Tammy's?

Word Problems Practice
Write a system of equations and solve:

1. Mr. Batterson ordered pizzas for the team. Medium pizzas have 8 slices and large pizzas have 10. If there are 13 pizzas and 108 slices, how many large pizza slices are there?

2. At a toy store, the children's department has bicycles and tricycles. There are 50 total, and 111 wheels. How many bicycles are there?

Word Problems Practice: Time
Write a system of equations and solve:

1. In five years, Kate will be twice as old as Joey. Right now, Kate is 11 years older than Joey. How old is Joey right now?

2. A bucket is full of red marbles and white marbles. There are twice as many white marbles as red ones. If I add seven white marbles, there will be three times as many white marbles as red ones. How many marbles were in the bucket before the white marbles were added?

Name_____ Period _____

Factoring and FOIL Self-Check

Algebra 9.7

Factor each (Look for perfect squares and difference of squares, GCF, and easy ones).

1. $x^2 - 6x + 9$

2. $x^2y - 5xy + 6y$

3. $9x^2 - 49$

4. $x^2 - 7x - 30$

5. $4x^2 - 28x + 49$

6. $4x^2 - 64$

Name_____ Period _____

Factoring and FOIL Self-Check

Algebra 9.7

Factor each (Look for perfect squares and difference of squares, GCF, and easy ones).

1. $x^2 - 6x + 9$

2. $x^2y - 5xy + 6y$

3. $9x^2 - 49$

4. $x^2 - 7x - 30$

5. $4x^2 - 28x + 49$

6. $4x^2 - 64$

Name_____ Period _____

Squares and Square Roots

Algebra 11.1

Practice: Simplify completely. All answers should be left in radical form. DO NOT USE A CALCULATOR.

27. $\sqrt{x^6} =$

28. $\sqrt{x^7} =$

29. $\sqrt{x^8} =$

30. $\sqrt{x^9} =$

31. $\sqrt{xy^2} =$

32. $\sqrt{x^{25}y^{49}} =$

33. $\sqrt{4x^3} =$

34. $\sqrt{12x^9y^2} =$

35. $\sqrt{144x} \cdot \sqrt{x} =$

36. $\sqrt{21x} \cdot \sqrt{7x^9} =$

37. $3\sqrt{2} + 2\sqrt{2} =$

38. $\sqrt{12} + 5\sqrt{3} =$

39. $\sqrt{54} + \sqrt{24} =$

40. $\sqrt{9x} + \sqrt{4x} =$

41. $\sqrt{\dfrac{x^2}{y^4}} =$

42. $\sqrt{\dfrac{4x^9}{25}} =$

43. $\sqrt{\dfrac{a^9}{a^7}} =$

44. $\sqrt{\dfrac{1}{a^8}} =$

45. $\dfrac{\sqrt{x}}{\sqrt{4x}} =$

46. $\sqrt{\dfrac{12xy}{3y}} =$

47. $\dfrac{2}{\sqrt{x}} =$

48. $2\sqrt{7}\left(\sqrt{7} - 2\right) =$

49. $\dfrac{36\sqrt{2} + 8\sqrt{3}}{4} =$

50. $(\sqrt{3} - 4\sqrt{2})(\sqrt{3} + 4\sqrt{2}) =$

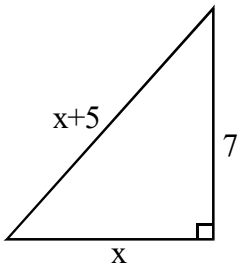
Name_____ Period _____

Pythagorean Review

Algebra 11.2

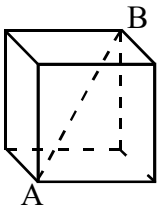
Answer each:

6. Solve for x:



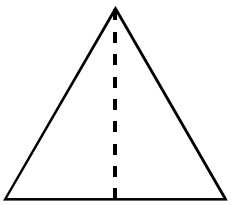
6. _____
(leave as a simplified fraction)

7. A cube has two-inch edges. What is the distance between opposite corners A and B of the cube? (leave in radical form)



7. _____

8. An equilateral triangle has 8-inch sides. What is the height of the triangle? (leave in radical form)



8. _____

9. The short leg of a right triangle is x inches long, and the hypotenuse of the triangle is 2x inches. How long is the longer leg (in terms of x, leave in radical form)?

9. _____

Challenge. A rectangle is nine inches longer than it is wide, and its diagonal is 10 inches longer than its width. What is the width of the quadrilateral? (Round to the hundredth, or, even better ... leave in radical form).

C. _____