

# Algebra 1-d

## FINAL TEST

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find the square roots

1)  $\sqrt{36m^4}$       2)  $\sqrt{64a^6b^2}$       3)  $\sqrt{121m^2n^4}$

4)  $m^2 - 20mn + 100n^2$       5)  $4a^2 - 20a + 25$

6)  $9x^4 + 6x^3 + 13x^2 + 4x + 4$     7)  $9a^4 + 12a^3 - 2a^2 - 4a + 1$

Simplify

8)  $\sqrt{50a^4}$       9)  $(49x)^{1/2}$       10)  $\sqrt{9x^3}$

Solve the following by completing the square. Using a calculator, find the surd roots to the nearest tenth.

11)  $w^2 + 10w + 22 = 0$       12)  $s^2 + 8s + 10 = 0$

Find the roots of these equations using the Quadratic Formula.

13)  $10m^2 - 11m - 6 = 0$       14)  $24x^2 + 14x - 3 = 0$

15) A house is rectangular in shape and its length is 4 feet less than twice its width. If the floor area of the house is 1456 square feet, What are the length and width of the house?

16) A fence 66 meters long encloses a rectangular garden with an area of 260 square meters. What are the dimensions of the enclosure?

17) A man made 148 pounds of a bird feed mixture, worth 20¢ per pound, made up of the following. Cracked corn at 4¢ per pound, black sunflower at 16¢ per pound, striped sunflower at 24¢ per pound and thistle seeds at 70¢ per pound. How many pounds of each did he use?

18) Henry raises exotic chickens. His wife told him that he had to get rid of some of them because they were running out of room. Henry decided on which ones he wanted to sell and sold them at auction. Henry had them in 5 pens according to their value. The bidder bids on one chicken and must pay that price for each of the chickens in that pen. The chickens in the first pen went for \$6.00 each, in the second pen for \$7.00 each, the third pen for \$12.00 each, the fourth pen for \$13.00 each and in the fifth pen they sold for \$15.00 each. If Henry averaged \$10.00 each, and received \$400 for all of the chickens that he sold, how many chickens were in each pen?