Name & Date: _____

Algebra Test: Chapter 2, Sections 1, 2

Find the zero(s) of the following functions (1-point each):
(Express your answer as "x = something(s)"

1) $f(x)=6x-18$

2) $f(x)=2-10x$

Solve (1 point):
3) $2(n-3)=3(n+5)$

Solve (1 Bonus Point):
4) $(2y+5)(3y-1)=0$

Express in terms of *i* (1 point):
5) $\dfrac{\sqrt{-49}}{-\sqrt{-64}}$

Simplify (1 point each):

6) $(6+2i)(-4-3i)$

7) $\dfrac{2-3i}{1-3i}$

8) $(3-5i)-(2-i)$

Story Problems from Gehinnom (2 Points Each)

9) Deke's boat travels 12 km̄h in still water. Deke travels 45 km downstream and then returns 45 km upstream in a total time of 8 hr. Find the speed of the current.
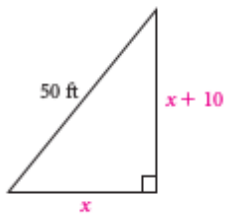
10) Jessie's Juice Bar prices its bottled juices by raising the wholesale price 50% and then adding 25 ¢. What is the wholesale price of a bottle of juice that sells for $2.95?
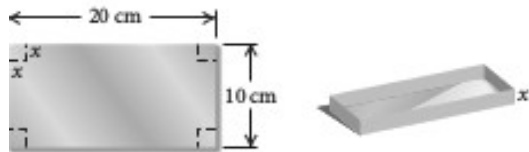
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11) Morgan Movers charges $90 plus $25 per hour to move households across town. McKinley Movers charges $40 per hour for crosstown moves. For what lengths of time does it cost less to hire Morgan Movers?

Solve _any one_ of the following story problems (2 points).
2 bonus points awarded for every additional solved problem.
See Next Page.

Legs of a Right Triangle. The hypotenuse of a right triangle is 50 ft. One leg is 10 ft longer than the other. What are the lengths of the legs?

50 ft

x + 10

x

Dimensions of a Box. An open box is made from a 10-cm by 20-cm piece of aluminum by cutting a square from each corner and folding up the edges. The area of the resulting base is 90 cm^2. What is the length of the sides of the squares?

Motion. A Riverboat Cruise Line boat travels 8 mi upstream and 8 mi downstream. The total time for both parts of the trip is 3 hr. The speed of the stream is 2 mph. What is the speed of the boat in still water?

Motion. Two freight trains leave the same city at right angles. The first train travels at a speed of 60 km/h. In 1 hr, the trains are 100 km apart. How fast is the second train traveling?

Sidewalk Width. A 60-ft by 80-ft parking lot is torn up to install a sidewalk of uniform width around its perimeter. The new area of the parking lot is two thirds of the old area. How wide is the sidewalk?

Maximizing Volume. The Barrieros have 24 ft of