

Math 200 - HW #1
January 24, 2011

Name key
Score _____

Show all work to receive full credit. Supply explanations when necessary. This assignment is due at January 26, 2011.

1. (2 points) Mr. Forrester sells bicycles and tricycles out of his garage. Looking over his inventory, he counted 10 seats and 24 wheels. How many of each type does Mr. Forrester have in inventory?

Let $x = \#$ OF BICYCLES IN INVENTORY
 $y = \#$ OF TRICYCLES IN INVENTORY

$$x + y = 10$$
$$2x + 3y = 24$$

SUBSTITUTION

$$y = 10 - x$$

$$2x + 3(10 - x) = 24$$

$$2x + 30 - 3x = 24$$

$$-x = -6 \Rightarrow x = 6 \Rightarrow y = 4$$

NON ALGEBRA

APPROACH \rightarrow

6 BICYCLES
4 TRICYCLES

2. (2 points) Pens cost 50 cents and pencils cost 25 cents. Alex bought 25 all together and paid \$8.50. How many more pencils than pens did he buy?

Let $x = \#$ OF PENCILS
 $y = \#$ OF PENS

$$x + y = 25$$
$$0.25x + 0.50y = 8.50$$

SUBSTITUTION

$$y = 25 - x$$

$$0.25x + 0.50(25 - x) = 8.50$$

$$0.25x + 12.50 - 0.50x = 8.50$$

$$-0.25x = -4$$

$$x = 16 \Rightarrow y = 9$$

NON ALGEBRA

APPROACH \rightarrow

7 MORE PENCILS
THAN PENS
16 PENCILS
9 PENS

#1 AGAIN

10 SEATS 24 WHEELS

<u>Bikes</u>	<u>Trikes</u>	<u>WHEELS</u>
0	10	30
1	9	29
2	8	28
3	7	27
4	6	26
5	5	25
6	4	24

6 BIKES & 4 TRIKES

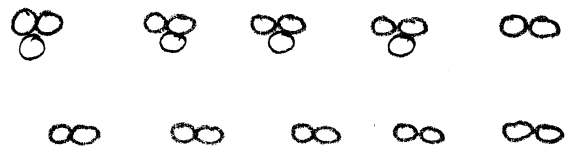
#1 AGAIN

START WITH 10 BIKES AND

0 TRIKES. ADD A WHEEL

TO EACH BIKE UNTIL WE HAVE

24 WHEELS.



4 TRIKES & 6 BIKES

#2 AGAIN

SINCE TOTAL COST IS \$8.50,

THE NUMBER OF PENCILS MUST BE EVEN.

<u>PENCILS</u>	<u>PENS</u>	<u>COST</u>
24	1	\$ 6.50
22	3	\$ 7
20	5	\$ 7.50
18	7	\$ 8
16	9	\$ 8.50

16 pencils & 9 pens \Rightarrow 7 MORE PENCILS THAN PENS