Pre-Calculus Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 7 Review

Solve each system of equations.

1. x + y = 5 2. 2x – 3y = -16

 x – y = -1 x – y = -5

3. x2 – y2 = 16 4. x = y

 x – y = 2 x = y2 - 6

5. x – 7y + 8z = -23 6. 2x + y – 3z = -7

 y – 9z = -11 x – y + 2z = 3

 z = 2 x – 2y – z = 2

1. All 26 members in Papillion-LaVista’s Snow Club went on a one-day trip. Members can rent skis for $18 per day or snowboards for $24 per day. The club paid a total of $552 for rental equipment. How many rented skis and how many rented snowboards?

Snowboards rented \_\_\_\_\_\_

Skis rented \_\_\_\_\_\_\_

1. In the 2000-2001 season, Minnesota’s Katie Smith was ranked first in the WNBA for total points and three-point field goals made. She scored 352 points making 227 shots, including 3-pointers, 2-point baskets, and free throws(1 point each). She made 3 times as many 2-point baskets as 3-pointers. Find the number of each type of basket she made.

2 point field goals \_\_\_\_\_\_

3 point field goals\_\_\_\_\_\_

Free throws \_\_\_\_\_\_

1. The available parking area of a parking lot is 350 square meters. A car requires 5 square meters of space, and a bus requires 25 square meters of space. The attendant can handle no more than 22 vehicles. If a car is charged $8 to park and a bus is charged $15, how many of each should the attendant accept to maximize income? What is the maximum income?

Constraints: 1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objective fn: Z = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Optimal # Cars\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Optimal # Busses\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Maximum Income \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A shoe manufacturer makes outdoor and indoor soccer shoes. There is a two-step process for both kinds of shoes. Each pair of outdoor shoes requires 1.5 hours in step one, 2 hour in step two, and produces a profit of $30. Each pair of indoor shoes requires 3 hour in step one, 1 hours in step two, and produces a profit of $15. The company has 48 hours of labor per day available for step one and 40 hours available for step 2. What combination of shoes will maximize the profit for the manufacturer? What is the maximum profit?

Constraints: 1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objective fn: Z = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Optimal # outdoor shoes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Optimal # indoor shoes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Maximum profit \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_