Coordinate Algebra

Name_____ ID: 1

6. 2 Solving Systems by Substitution--Day 2

Date_____ Period____

Solve each system by substitution.

1) $y = 3x - 10$
    $y = -7x + 20$

2) $y = 6x + 17$
    $-8x + 3y = 11$

3) $y = -7x - 10$
    $14x + 2y = -20$

4) $y = -6x - 1$
    $y = 7x - 1$

5) $y = -3x$
    $-5x + 7y = 0$

6) $6x - 2y = 4$
    $y = 3x + 6$

7) One cable television provider has a $60 set up fee and charges $80 per month, another provider has a $160 equipment fee and charges $70 per month.

    a) In how many months will the cost be the same? What will that cost be?

    b) If you plan to move in 6 months, which is the cheaper option? Explain.

-1- Made with Infinite Algebra 1.

8) The Straus family is deciding between two lawn- care services. Green Lawn charges a $49 startup fee, plus $29 per month. Grass Team charges a $25 startup fee, plus $37 per month.

a) In how many months will both lawn - care services cost be the same? What will that cost be?

9) Casey wants to buy a gym membership. One gym has a $150 joining fee and costs $35 per month. Another gym has no joining fee and costs $60 per month.

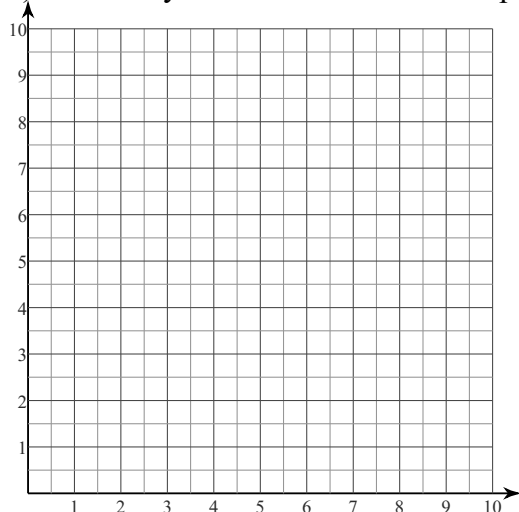a) In how many months will both gym memberships cost be the same? What will that cost be?

b) If Casey plans to move in 5 months, which is the cheaper option? Explain.

10) For this year's Science Fair you have chosen to test the effects of listening to Taylor Swift songs on two groups of marigold plants. The test group starts out at 4 inches tall and the control group start at 5 inches tall. The test group grows at a rate of 1.5 inches per week. The control group grows at a rate of 1 inch per week. Graph the two groups of plants on the graph below.
a)When are the two groups of plants the same height?

b)How tall is each group after 6 weeks?

c)What can you conclude about the experiment?

Name_____ ID: 1

6. 2 Solving Systems by Substitution--Day 2

Date_____ Period____

Solve each system by substitution.

1) $y = 3x - 10$
   $y = -7x + 20$

   $(3, -1)$

2) $y = 6x + 17$
   $-8x + 3y = 11$

   $(-4, -7)$

3) $y = -7x - 10$
   $14x + 2y = -20$

   Infinite number of solutions

4) $y = -6x - 1$
   $y = 7x - 1$

   $(0, -1)$

5) $y = -3x$
   $-5x + 7y = 0$

   $(0, 0)$

6) $6x - 2y = 4$
   $y = 3x + 6$

   No solution

7) One cable television provider has a $60 set up fee and charges $80 per month, another provider has a $160 equipment fee and charges $70 per month.

   a) In how many months will the cost be the same? What will that cost be?

   b) If you plan to move in 6 months, which is the cheaper option? Explain.
   10 months, $860, first option

8) The Straus family is deciding between two lawn- care services. Green Lawn charges a $49 startup fee, plus $29 per month. Grass Team charges a $25 startup fee, plus $37 per month.

a) In how many months will both lawn - care services cost be the same? What will that cost be?

3 months, $136

9) Casey wants to buy a gym membership. One gym has a $150 joining fee and costs $35 per month. Another gym has no joining fee and costs $60 per month.

a) In how many months will both gym memberships cost be the same? What will that cost be?

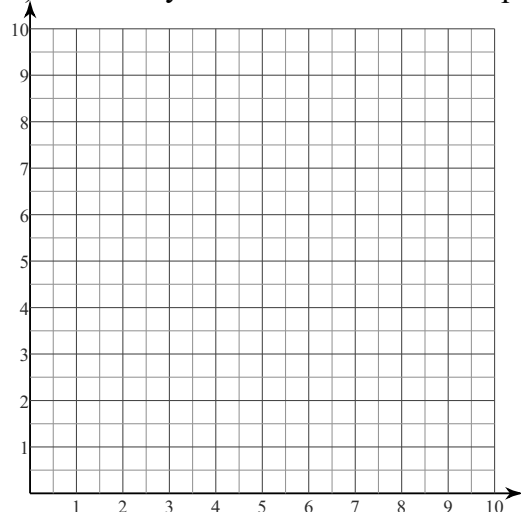b) If Casey plans to move in 5 months, which is the cheaper option? Explain.

6 months, $360, second option

10) For this year's Science Fair you have chosen to test the effects of listening to Taylor Swift songs on two groups of marigold plants. The test group starts out at 4 inches tall and the control group start at 5 inches tall. The test group grows at a rate of 1.5 inches per week. The control group grows at a rate of 1 inch per week. Graph the two groups of plants on the graph below.
a)When are the two groups of plants the same height?

b)How tall is each group after 6 weeks?

c)What can you conclude about the experiment?

2 weeks same height