

Substitution HW Day 1

NAME _____ DATE _____ PERIOD _____

Skills Practice Set equal to equal to each other Solve Systems of Equations Algebraically

Solve each system of equations algebraically.

1. $y = x - 8$
 $y = 5x$
 $x - 8 = 5x$
 $-8 = 4x$
 $-2 = x$
 $(-2, -10)$
2. $y = -x - 4$
 $y = 3x$
 $(-1, -3)$
3. $y = x + 11$
 $y = 12x$
 $x + 11 = 12x$
 $11 = 11x$
 $1 = x$
 $(1, 12)$
4. $y = x - 14$
 $y = -6x$
 $(2, -12)$
5. $y = -x + 9$
 $y = 2x$
 $2x = -x + 9$
 $3x = 9$
 $x = 3$
 $(3, 6)$
6. $y = x + 15$
 $y = -4x$
 $(-3, 12)$
7. $y = -x - 10$
 $y = 4x$
 $4x = -x - 10$
 $5x = -10$
 $x = -2$
 $(-2, -8)$
8. $y = x + 24$
 $y = -7x$
 $(-3, 21)$
9. $y = -x + 18$
 $y = 8x$
 $8x = -x + 18$
 $9x = 18$
 $x = 2$
 $(2, 16)$

Write and solve a system of equations that represents each situation. Interpret the solution.

10. TELEVISION Videl watched 6 times as many hours of television over the weekend as Dineen. Together they watched a total of 14 hours of television. How many hours of television did each person watch over the weekend?

Worked out on video. Videl watches 12 hours and Dineen watches 2 hours of TV.

11. CROSS-COUNTRY SKIING Lucida is a cross-country ski racer. On Saturday, she skied twice as many miles as she did on Sunday. Over the weekend she skied a total of 63 miles. How far did she ski on each day?

① Saturday = x miles
 Sunday = y miles
 ② Saturday = twice the miles on Sunday
 $x = 2 \cdot y$
 ③ $x = 2y$
 $x + y = 63 \rightarrow x = -y + 63$
 $2y = -y + 63$
 $3y = 63$
 $y = 21$
 $x = 42$
 ④ Saturday + Sunday = total of 63
 $x + y = 63$
 ⑤ Lucinda skied 42 miles on Saturday and 21 miles on Sunday.

12. DARTS Bryson and Lilly played a game of darts, and Lilly scored 4 more points than Bryson. The total of their scores was 180. How many points did each of them score?

① Bryson = x points
 Lilly = y points
 ② Lilly = 4 more than Bryson
 $y = 4 + x$
 Together = total of 180
 $x + y = 180$
 ③ $y = 4 + x$
 $x + y = 180 \rightarrow y = -x + 180$
 $4 + x = -x + 180$
 $4 + 2x = 180$
 $2x = 176$
 $x = 88$
 $y = 92$
 ④ Bryson scored 88 points and Lilly scored 92 points.

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