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(45, 1, 2, 9)

Day 55 Warm-ups:

45. Is (-2, -7) the solution of the following system? Justify your answer.

$7y - 4x = 29$

$x = y - 5$

$-41 \neq 29$

$7(-7) - 4(-2) = 29$ X

$-49 + 8$

$-2 = -7 - 5$ X

No Solution

Solve each system by graphing.

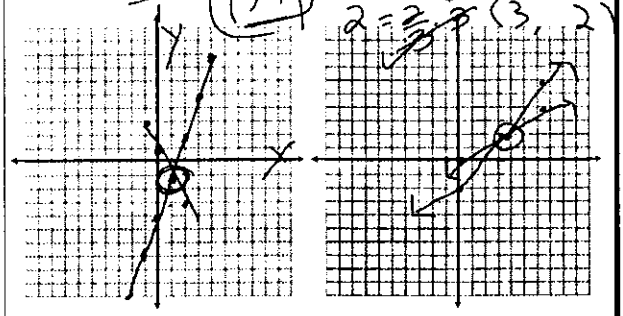
$2 = \frac{4}{3} - 2$

1. $y = 3x - 4$

$y = -2x +$ (1, -1)

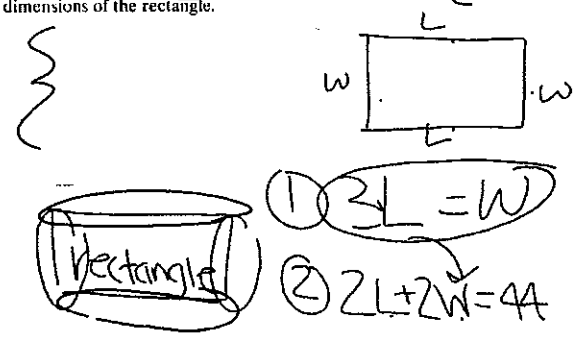
2. $y = \frac{4}{3}x - 2$

$y = \frac{2}{3}x + 0$ (3, 2)



In Exercises 9 and 10, write and solve a system of equations for each situation.

9. A rectangle is 3 times longer than it is wide. The perimeter is 44 cm. Find the dimensions of the rectangle.



① $3L = W$

② $2L + 2W = 44$

(11) $y = 2x + 7$

$y = 5x + 4$

$5x + 4 = 2x + 7$

$-2x \quad -2x$

$3x + 4 = 7$

$-4 \quad -4$

$\frac{3x}{3} = \frac{3}{3}$

$x = 1$

$y = 2 \cdot 1 + 7$

$y = 2 + 7$

$y = 9$

(1, 9)

(13) $4x+2y=8$

$y=-2x+4$

$4x+2(-2x+4)=8$

$4x-4x+8=8$

$8=8$ True

(14) Infinitely many solutions

$6x-3y=6$

$y=2x+5$

$6x-3(2x+5)=6$

$6x-6x-15=6$

$-15=6$ False.

No Solution

9, 14, 11, 13, 1

(1) $y=x$

$y=-x+2$

$-x+2=x$

$+x \quad +x$

$\frac{2}{2}=\frac{2x}{2}$

$1=x$

$y=1$

(1,1)

(9) $x+2y=200$

$x=y+50$

$y+50+2y=200$

$3y+50=200$

$-50 \quad -50$

$\frac{3y}{3}=\frac{150}{3}$

$y=50$ (100,50)

$x=100$

7.2 Notes: Solving a System of Equations by Subtitution

- when neither equation is already solved for a variable

Steps:

1. Solve for a variable with a coefficient of 1 or -1. (circle it)
2. Substitute that expression into the other equation and solve.
3. Substitute that value into the circled eq. and solve for the remaining letter.
4. ✓ Answer

19. $a-1.2b=-3$

$0.2b+0.6a=12$

p. 384

$a-1.2b=-3$

$+1.2b \quad +1.2b$

$a=1.2b-3$

$0.2b+0.6(1.2b-3)=12$

$0.2b+.72b-1.8=12$

$.92b-1.8=12$

$+1.8 \quad +1.8$

$\frac{.92b}{.92}=\frac{13.8}{.92}$

$b=15$

$a=1.2(15)-3$

$a=15$

(15,15)

20. $0.5x + 0.25y = 36$

$y + 18 = 16x$

$-18 \quad -18$

$y = 16x - 18$

$0.5x + 0.25(16x - 18) = 36$

$0.5x + 4x - 4.5 = 36$

$+4.5 \quad +4.5$

$\frac{4.5x}{4.5} = \frac{40.5}{4.5}$

$x = 9$

$y = 16(9) - 18$

$y = 126$

$(9, 126)$

5. Multiple Choice You have 28 coins that are all nickels n and dimes d. The ... of the coins is $2.05. Which system of equations can be used to find the num... of nickels and the number of dimes?

(A) $n + d = 28$, $10n + 5d = 2.05$

(B) $n + d = 205$, $n + d = 28$

(C) $10n + 5d = 205$, $n + d = 28$

(D) $n + d = 28$, $5n + 10d = 205$

$.05n + .10d = 2.05$

$n + d = 28$ 28 coins (nickels + dimes)

$2.05

36. $x - 3y = 14$

$x - 2 = 0$

$+2 \quad +2$

$x = 2$ $(2, -4)$

$2 - 3y = 14$

$-2 \quad -2$

$\frac{-3y}{-3} = \frac{12}{-3}$

$y = -4$

38. $4x + y = -2$

$-2x - 3y = 1$

$y = -4x + 2$

$4x + 4 = -2$

$-4x \quad -4x$

$y = -4x - 2$

$-2x - 3(-4x - 2) = 1$

$-2x + 12x + 6 = 1$

$10x + 6 = 1$

$-6 \quad -6$

$\frac{10x}{10} = \frac{-5}{10}$

$x = -\frac{1}{2}$

$y = -4(-\frac{1}{2}) + 2$

$y = 0$

$(-\frac{1}{2}, 0)$

39. $3x + 5y = 2$

$x + 4y = -4$

Assignment: WK6K

p. 371 (12, 15, 16, 19, 22, 23, 27, 28, 37, 38)

just write 2 eqs