Chapter 7 Review HW (updated 2017)

CH7 Review HW
page 475
#'s 5-23 (odd)
WP's #'s 11 and 24
#'s 25-30

7 CHAPTER REVIEW

7.1 Solve Linear Systems by Graphing pp. 427–433

EXERCISES

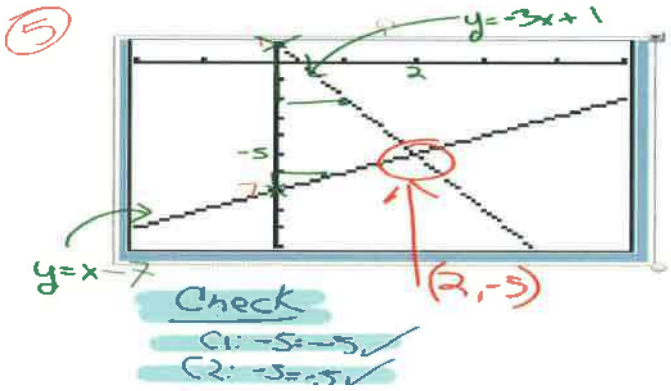
Solve the linear system by graphing. Check your solution.

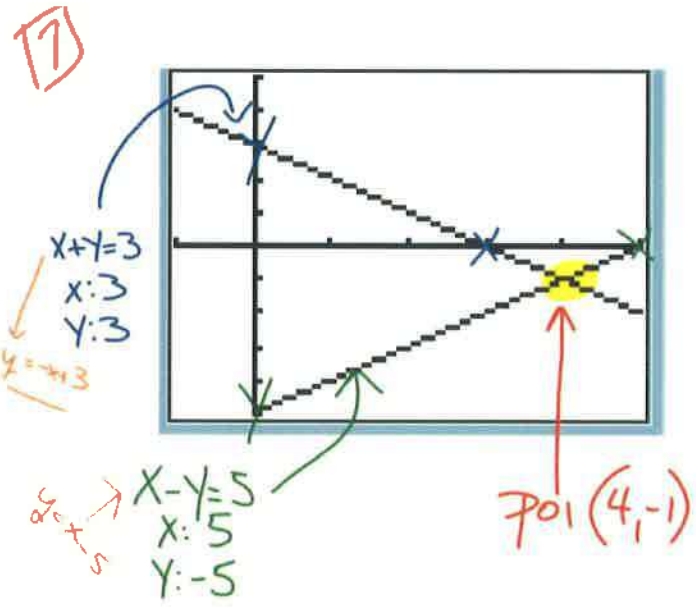
5. $y = -3x - 1$
   $y = x - 7$

(2, -5)

7. $x + y = 3$
   $x - y = 5$

(4, -1)





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7.2 Solve Linear Systems by Substitution

EXERCISES

Solve the linear system using substitution.

9. $x = 4y - 9$
   $x - y = 4$

① Isolate x → $x = y + 4$

② substitute: $(y+4) + 4y = 9$

$5y + 4 = 9$

$-4 \quad -4$

$\frac{5y}{5} = \frac{5}{5}$

$y = 1$

③ FIND X: $x = 1 + 4$

$x = 5$

④ Check in orig EQ

C: $5 + 4(1) = 9$

$9 = 9$ ✓

C: $5 - 1 = 4$

$4 = 4$ ✓

11. **ART** Kara spends $16 on tubes of paint and disposable brushes for an art project. Each tube of paint costs $3, and each disposable brush costs $.50. Kara purchases twice as many brushes as tubes of paint. Find the number of brushes and the number of tubes of paint that she purchases.

KI: • paint $3 • spent $16

• brush $.50 • bought twice as many brushes

x = # paints

y = # brushes

EQ's: $3x + .50y = 16$

$2x = y$

Solve (substitution is the easiest method)

$3x + .50(2x) = 16$

$4x = 16$

$x = 4$

FIND Y: $y = 2x = 2(4)$

$y = 8$

Kara bought 4 paints and 8 brushes

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7.3 Solve Linear Systems by Adding or Subtracting

EXERCISES

Solve the linear system using elimination.

13. $4x - 5y = 14$
$-4x + y = -6$

① +

$-4y = 8$

$\frac{-4y}{-4} = \frac{8}{-4}$

$y = -2$

② FIND X:

$4x - 5(-2) = 14$

$4x + 10 = 14$

$-10 \quad -10$

$\frac{4x}{4} = \frac{4}{4}$

$x = 1$

③ Check: C: $4(1) - 5(-2) = 14$

$14 = 14$ ✓

C: $-4(1) + -2 = -6$

$-6 = -6$ ✓

15. $9x - 2y = 34$
$-1(5x - 2y = 10)$ → $-5x + 2y = -10$

$9x - 2y = 34$

$-5x + 2y = -10$ ↓ +

$\frac{4x}{4} = \frac{24}{4}$

$x = 6$

FIND Y:

$9(6) - 2y = 34$

$-54 \quad -54$

$\frac{-2y}{-2} = \frac{-20}{-2}$

$y = 10$

C: $9(6) - 2(10) = 34$

$34 = 34$ ✓

C: $5(6) - 2(10) = 10$

$10 = 10$ ✓

17. $4y = 11 - 3x$
$3x + 2y = -5$

① PUT IN STANDARD FORM

② $3x + 4y = 11$
$-1(3x + 2y = -5)$ → $-3x - 2y = 5$

$3x + 4y = 11$

$-3x - 2y = 5$ ↓ +

$\frac{2y}{2} = \frac{16}{2}$

$y = 8$

③ FIND X:

$3x + 2(8) = -5$

$-16 \quad -16$

$\frac{3x}{3} = \frac{-21}{3}$

$x = -7$

④ Check: C: $4(8) = 11 - 3(-7)$

$32 = 32$ ✓

C: $3(-7) + 2(8) = -5$

$-5 = -5$

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7.4 Solve Linear Systems by Multiplying First

EXERCISES

Solve the linear system using elimination.

19. $x + 6y = 28$
$2x - 3y = -19$

$x - 2 \longrightarrow -2x - 12y = -56$
$2x - 3y = -19$ $\longrightarrow$ $+$

$-15y = -75$
$\frac{-15y}{-15} = \frac{-75}{-15}$

$y = 5$

FIND X:

$x + 6(5) = 28$
$-30 \quad -30$

$x = -2$

C: $-2 + 6(5) = 28$
$28 = 28$ ✓

C: $2(-2) - 3(5) = -19$
$-19 = -19$ ✓

21. $8x - 7y = -3$
$6x - 5y = -1$

$\times 6 \longrightarrow 48x - 42y = -18$
$\times -8 \longrightarrow -48x + 40y = 8$ $\longrightarrow$ $+$

$-2y = -10$
$\frac{-2y}{-2} = \frac{-10}{-2}$

$y = 5$

FIND X:

$8x - 7(5) = -3$
$8x - 35 = -3$
$+35 \quad +35$

$\frac{8x}{8} = \frac{32}{8}$

$x = 4$

C: $8(4) - 7(5) = -3$
$-3 = -3$ ✓

C: $6(4) - 5(5) = -1$
$-1 = -1$ ✓

23. $11x = 2y - 1$
$3y = 10 + 8x$

↓ PUT IN STD FORM

$8(11x - 2y = -1) \longrightarrow 88x - 16y = -8$
$11(-8x + 3y = 10) \longrightarrow -88x + 33y = 110$ $\longrightarrow$ $+$

$17y = 102$
$\frac{17y}{17} = \frac{102}{17}$

$y = 6$

FIND X:

$11x = 2(6) - 1$
$\frac{11x}{11} = \frac{11}{11}$

$x = 1$

C: $11(1) = 2(6) - 1$
$11 = 11$ ✓

C: $3(6) = 10 + 8(1)$
$18 = 18$ ✓

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24. **CAR MAINTENANCE** You pay $24.50 for 10 gallons of gasoline and 1 quart of oil at a gas station. Your friend pays $22 for 8 gallons of the same gasoline and 2 quarts of the same oil. Find the cost of 1 quart of oil.

KI: YOU PAY $24.50 10 gal gas 1 QT oil
FRIEND PAYS $22 8 gal gas 2 QT oil

x = Cost of gas ($/gal)
y = Cost of oil ($/QT)

EQ's: $10x + 1y = \$24.50$
$8x + 2y = \$22$

$x-2 \rightarrow -20x - 2y = -49$
$8x + 2y = 22$

$-12x = -27$
$\frac{-12x}{-12} = \frac{-27}{-12}$

$x = \$2.25$

FIND y:

$8(2.25) + 2y = 22$
$18 + 2y = 22$
$-18 \quad -18$
$2y = 4$
$\frac{2y}{2} = \frac{4}{2}$
$y = \$2$

Cost of gas is $2.25/GAL and oil is $2/QT

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7.5 Solve Special Types of Linear Systems

EXERCISES

Tell whether the linear system has *one solution*, *no solution*, or *infinitely many solutions*. *Explain.*

25. $x - 2y = 3$
$1.5x - 3y = 0$

26. $x + y = 8$
$x + 8 = y$

27. $4x - 2y = 6$
$4x - 2y = 10$

$1.5(2y-3)-3y=0$

$3y-4.5-3y=0$

$-4.5 \neq 0$

NO SOLUTION

$-x+y=8$

$x-y=8$

$0=0$

INFINITE SOLUTIONS

$(4x-2y=10)\times -1$

$4x-2y=6$

$-4x+2y=-10$

$0 \neq -4$

NO SOLUTION

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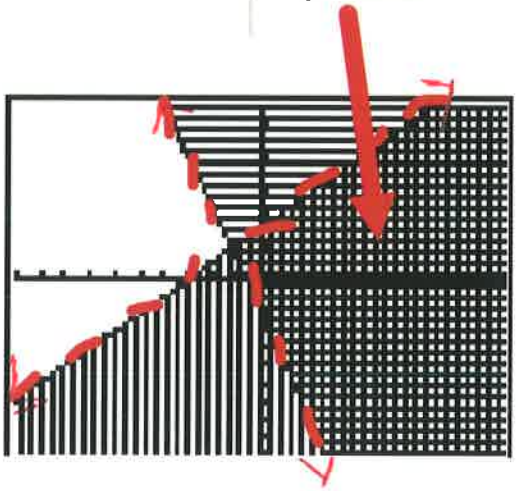
7.6 Solve Systems of Linear Inequalities

pp. 466–472

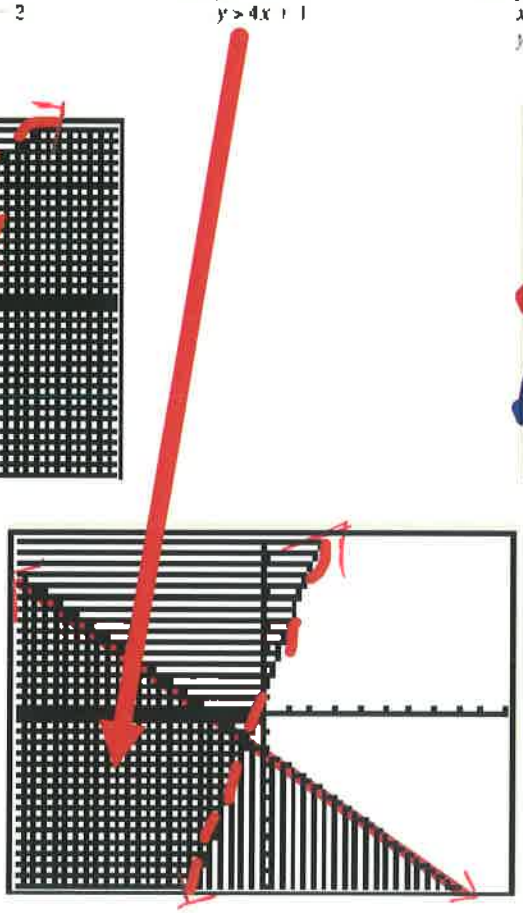
EXERCISES

Graph the system of linear inequalities.

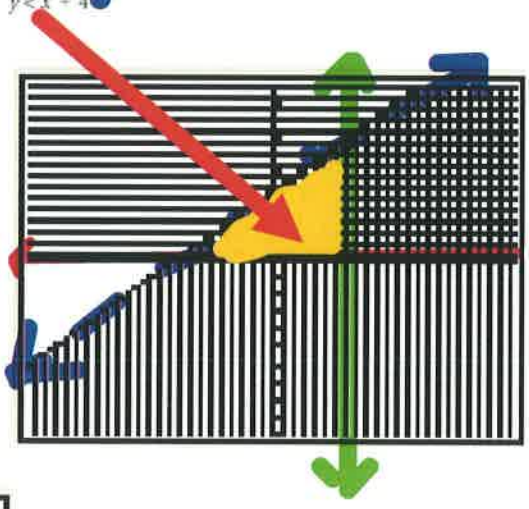
28. $y < x + 3$
$y > -3x - 2$



29. $y \leq -x - 2$
$y > 4x + 1$



30. $y \geq 0$
$x \leq 2$
$y < x + 4$



PG 7

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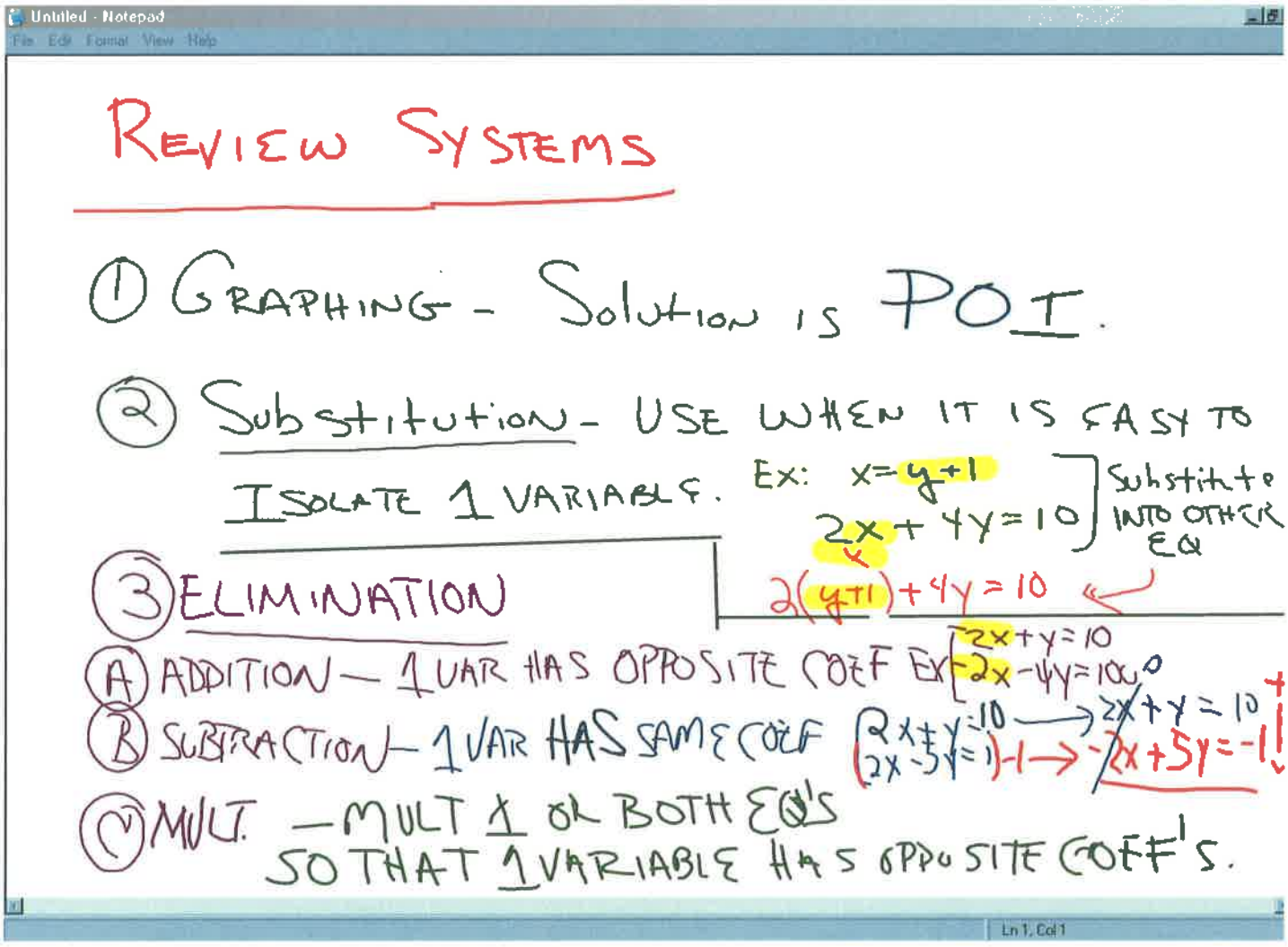


Additional Practice Problems

Classwork: CH7 Review WP page 479 #28 and page 475 #'s 6, 8, 10, 14, 20, 22

WP pg 479 #28

PRACTICE WP

① KE

CARRIE	DAVE
150 miles	120 miles
$215	$176

① DEFINE VAR

X = TRUCK $ RENTAL
Y = $ PER MILE

② SYSTEM EQ

C: $X + 150Y = 215$
D: $X + 120Y = 176$

② SOLVE

$$\begin{array}{r} X + 150Y = 215 \\ -X - 120Y = -176 \\ \hline 30Y = 39 \end{array}$$

$\frac{30Y}{30} = \frac{39}{30}$

$Y = 1.3$

$X + 150(1.3) =$

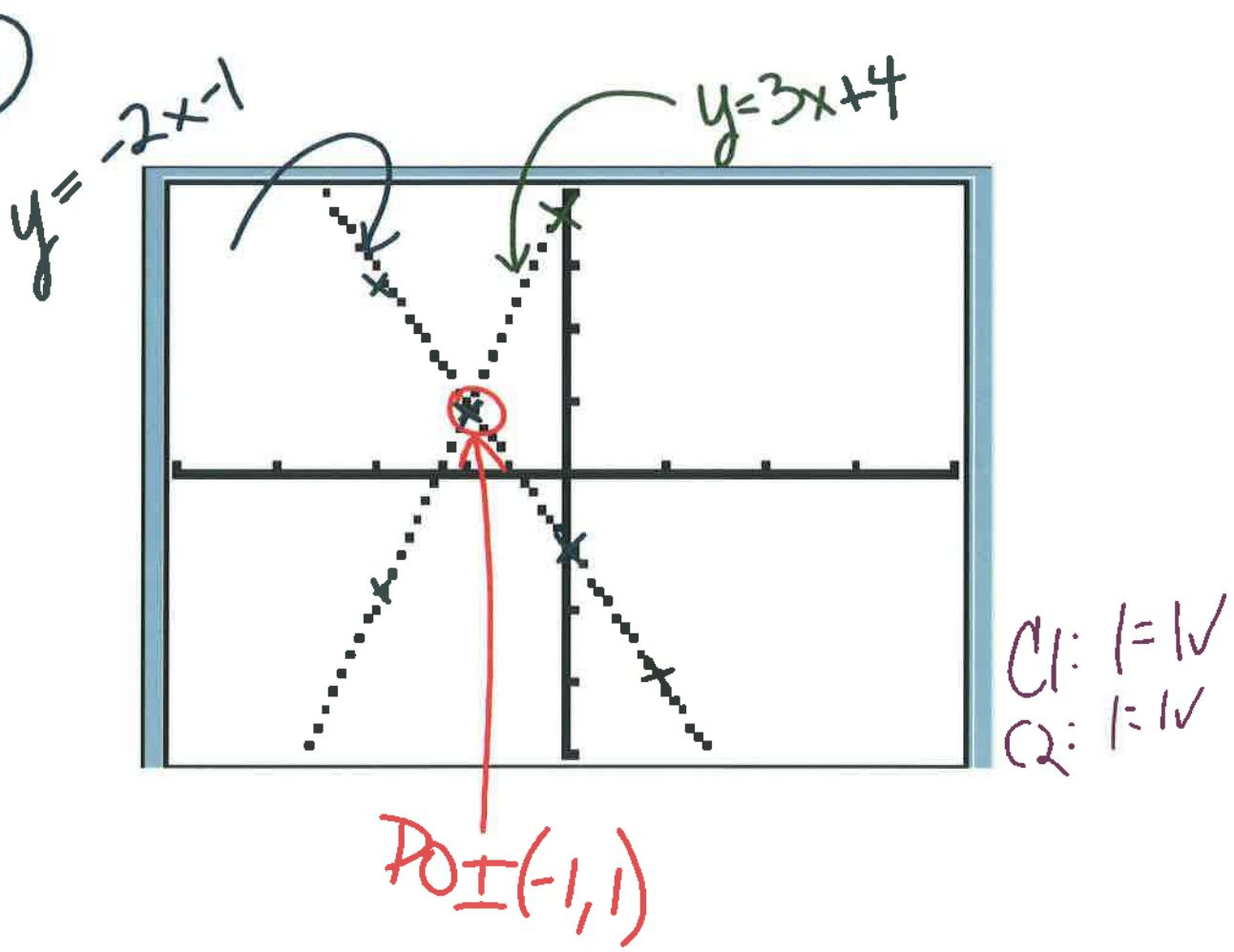
$X = 20$

② ANSWER

$20 FOR THE TRUCK AND $1.30 PER MILE

Additional Practice Problems

(6)



Additional Practice Problems

7.2 Solve Linear Systems by Substitution

EXERCISES

Solve the linear system using substitution.

5. $y = 2x - 7$
$x + 2y = 1$

$x + 2(2x - 7) = 1$

$x + 4x - 14 = 1$

$5x = 15$

$x = 3$

$y = 2(3) - 7$ $\quad y = -1$

6. $2x + y = -15$
$y = 5x + 6$

$y = 5x + 6$

$2x + (5x + 6) = -15$

$7x = -21$

$x = -3$

$y = 5(-3) + 6$ $\quad y = -9$

Additional Practice Problems

14. $x + 7y = 12$
$2x + 7y = 18$

$x - 1 \rightarrow$ $x + 7y = 12$
$2x + 7y = 18 \downarrow$

$-x - 7y = -12$
$2x + 7y = 18$

$3x = -6$

$x = -2$

$y = 2$

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22. $5x - 3y = -2$
$3x + 2y = 11$

24

$5x - 3y = -2$
$3x + 2y = 11$

20. $3x - 5y = -7$
$-4x + 7y = 8$

$\times 4 \rightarrow 12x - 20y = -28$
$\times 3 \rightarrow -12x + 21y = 24$

$y = -4$

$-9, -4$

$3x - 5(-4) = -7$
$-20 \quad -20$

$3x = -27$

$x = -9$