Math 9 Unit 6

Name_____

Solving Equations (Section 6.1-6.2)

Date_____

Solve each equation. (Show all work)

1) $-4 = 2(x - 6)$

$-4 = 2x - 12$ (+12)

$8 = 2x$

$4 = x$

2) $-54 = n + 4(n - 6)$

$-54 = n + 4n - 24$

$-54 = 5n - 24$ (+24)

$-30 = 5n$

$-6 = n$

$n = -$

3) $5(1 - 7m) = 40$

$5 - 35m = 40$

$-35m = 35$

$m = -1$

4) $-6(2 + 7r) = -54$

$-12 - 42r = -54$

$-42r = -42$

$r = 1$

5) $-12 = -4 + 8(5x - 1)$

$-12 = -4 + 40x - 8$

$-12 = -12 + 40x$

$0 = 40x$

$0 = x$

6) $5(n + 1) = 45$

$5n + 5 = 45$

$5n = 40$

$n = 8$

7) $10b - 32 - 2b = -4(2 + b)$

$8b - 32 = -8 - 4b$ (+4b)

$12b - 32 = -8$

$12b = 24$

$b = 2$

8) $-2(1 + 4v) = -6(3 + v)$

$-2 - 8v = -18 - 6v$ (+6v)

$-2 = -18 + 2v$

$16 = 2v$

$v = 8$

9) $-2 = \frac{-3 + x}{8}$

$-16 = -3 + x$

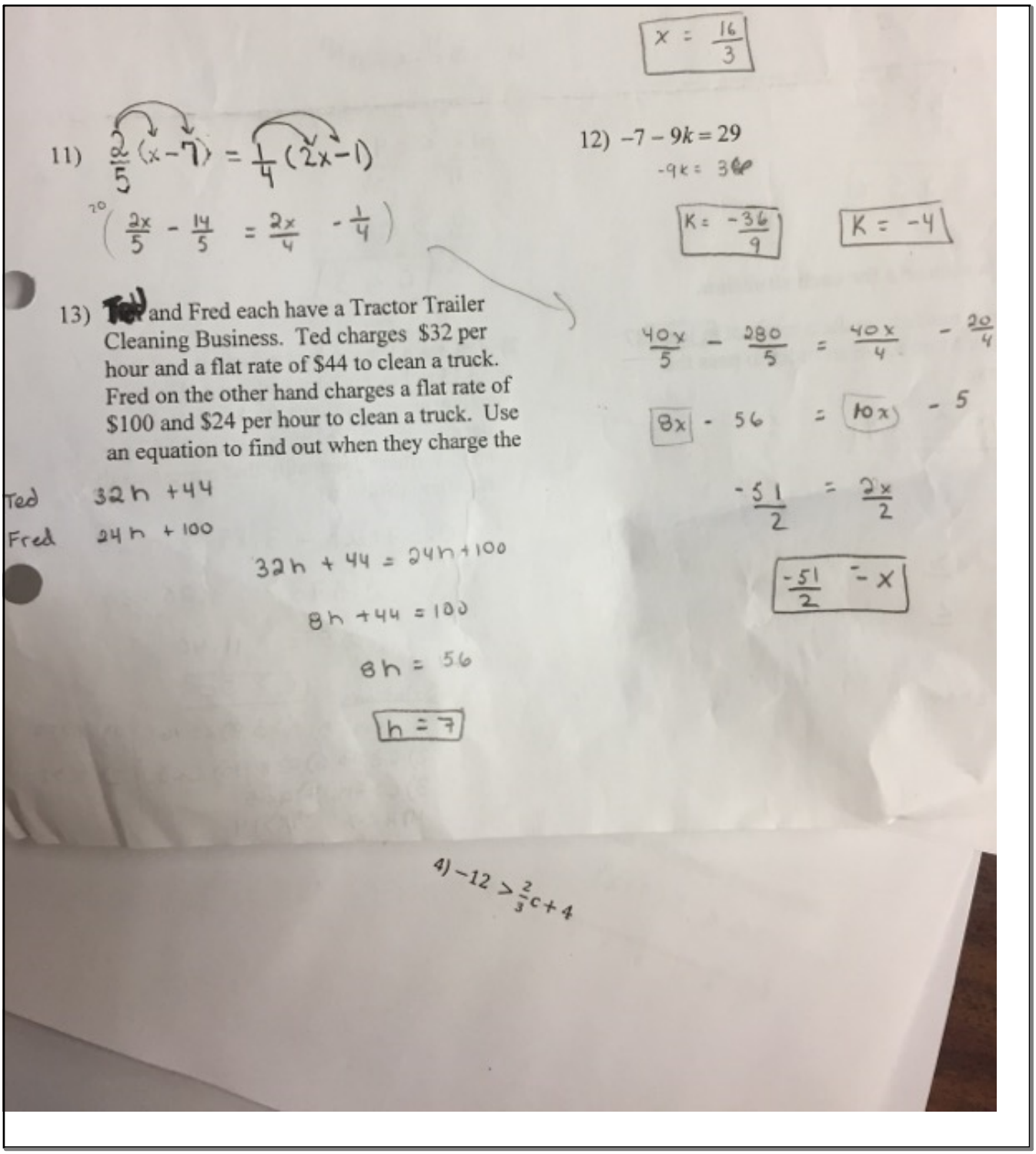
$-13 = x$

10) $2 = \frac{2}{3} + \frac{x}{4}$ (12)

$24 = 8 + 3x$

$16 = 3x$

$x = \frac{16}{3}$



$x = \frac{16}{3}$

11) $\frac{2}{5}(x-7) = \frac{1}{4}(2x-1)$

$20\left(\frac{2x}{5} - \frac{14}{5} = \frac{2x}{4} - \frac{1}{4}\right)$

12) $-7 - 9k = 29$

$-9k = 36$

$K = \frac{-36}{9}$ $K = -4$

13) Ted and Fred each have a Tractor Trailer Cleaning Business. Ted charges \$32 per hour and a flat rate of \$44 to clean a truck. Fred on the other hand charges a flat rate of \$100 and \$24 per hour to clean a truck. Use an equation to find out when they charge the

Ted $32h + 44$

Fred $24h + 100$

$32h + 44 = 24h + 100$

$8h + 44 = 100$

$8h = 56$

$h = 7$

$\frac{40x}{5} - \frac{280}{5} = \frac{40x}{4} - \frac{20}{4}$

$8x - 56 = 10x - 5$

$-51 = 2x$

$\frac{-51}{2} = x$

4) $-12 > \frac{2}{3}c + 4$

Math 9

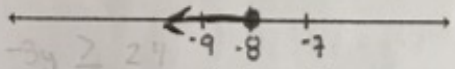
Name _____

Inequalities ICA

Per/Sec. _____ Da

Solve and graph. Show all work (Section 6.3 – 6.5)

1. $-3y \geq 24$



$\frac{-3y}{-3} \geq \frac{24}{-3}$

$y \leq -8$

2. $-2c \leq 26$

$\frac{-2c}{-2} \leq \frac{26}{-2}$

$c \geq -13$

3. $4 - c < 16$ (-4)

$-c < 12$

$\frac{-c}{-1} < \frac{12}{-1}$

$c > -12$

4. $15 < -k + 8$ (-8)

$7 < -k$

$-7 > k$ $\quad k < -7$

5. $3k + 8 \geq 17$ (-8)

$\frac{3k}{3} \geq \frac{9}{3}$

$k \geq 3$

6. $-9 \leq 2a - 25$ (+25)

$\frac{16}{2} \leq \frac{2a}{2}$

$8 \leq a$

7. $21 < -4 - 5a$ (+4)

$\frac{25}{-5} < \frac{-5a}{-5}$

$-5 > a$

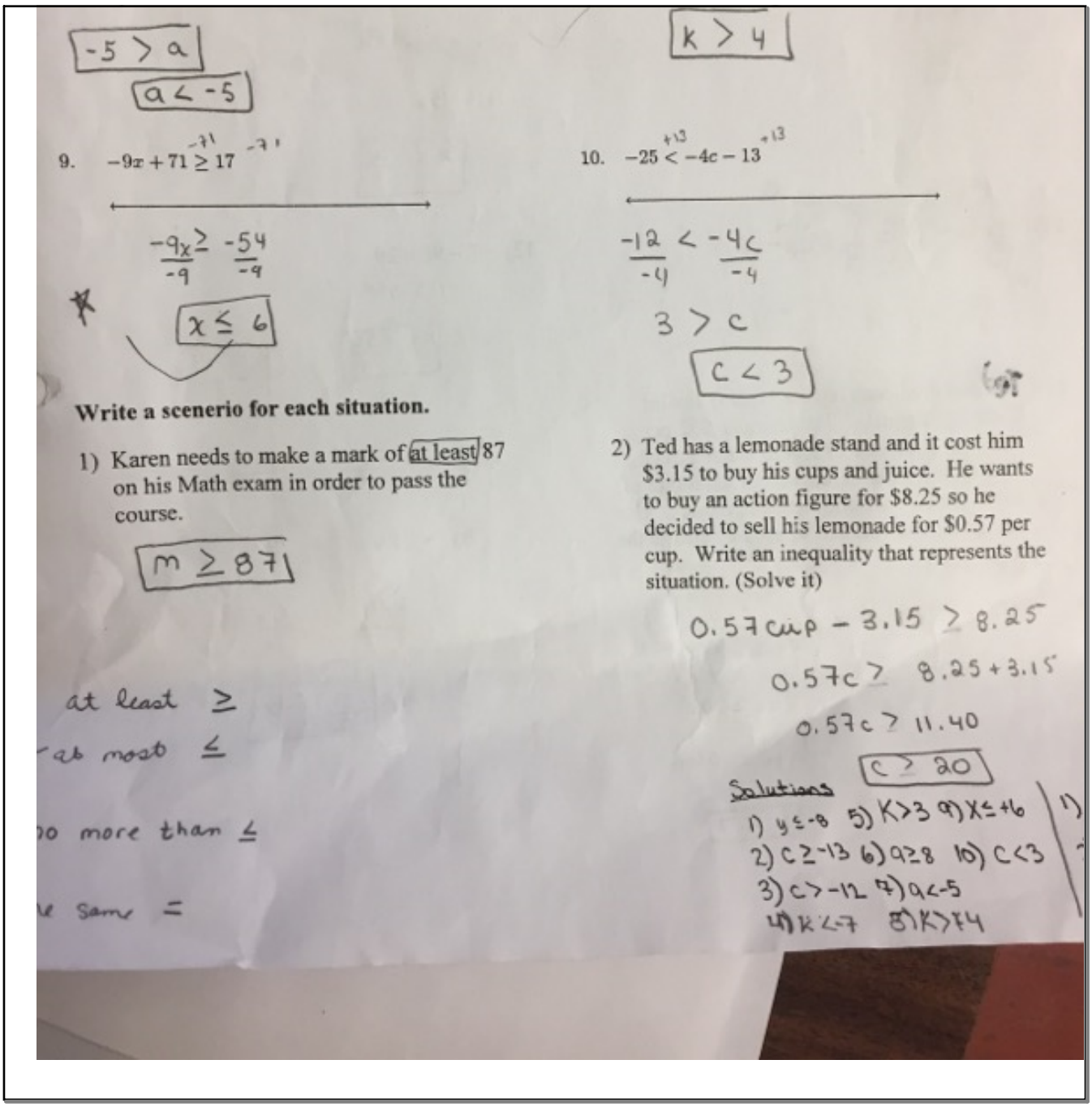
$a < -5$

8. $-3k + 14 < 2$ (-14) $\quad \frac{-3k}{-3}$

$\frac{-3k}{-3} < \frac{-12}{-3}$

$k > 4$

k



$-5 > a$

$a < -5$

$k > 4$

9. $-9x + 71 \geq 17$ (−71, −71)

$\frac{-9x}{-9} \geq \frac{-54}{-9}$

$x \leq 6$

10. $-25 < -4c - 13$ (+13, +13)

$\frac{-12}{-4} < \frac{-4c}{-4}$

$3 > c$

$c < 3$

Write a scenerio for each situation.

1) Karen needs to make a mark of at least 87 on his Math exam in order to pass the course.

$m \geq 87$

2) Ted has a lemonade stand and it cost him $3.15 to buy his cups and juice. He wants to buy an action figure for $8.25 so he decided to sell his lemonade for $0.57 per cup. Write an inequality that represents the situation. (Solve it)

$0.57cup - 3.15 \geq 8.25$

$0.57c \geq 8.25 + 3.15$

$0.57c \geq 11.40$

$c \geq 20$

at least $\geq$

at most $\leq$

no more than $\leq$

the same $=$

Solutions

1) $y \leq -8$ 5) $K > 3$ 9) $X \leq +6$

2) $c \geq -13$ 6) $9 \geq 8$ 10) $c < 3$

3) $c > -12$ 7) $a < -5$

4) $K < -7$ 8) $K > 14$

Unit 6-Equations & Inequalities Test Review (Day 2)

Part 1) Solve each of the following.

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

$4x-4+4x=6x+2$

$8x-4=6x+2$

$2x-4=2$

$\frac{2x}{2}=\frac{6}{2}$

$x=3$

2) $\frac{1}{2}(4x+2)=\frac{1}{3}(x-1)$ Do last

$\frac{4x}{2}+\frac{2}{2}=\frac{1}{3}x-\frac{1}{3}$ (6)

$\frac{24x}{2}+\frac{12}{2}=\frac{6x}{3}-\frac{6}{3}$

$12x+6=2x-2$

$10x+6=-2$

$10x=-8$

$x=\frac{-8}{10}$

$x=-\frac{4}{5}$

3) $\frac{1x}{15}+\frac{1}{3}+\frac{2x}{5}+4=\frac{2}{15}$ do last (15)

$x+5+6x+60=2$

$7x+65=2$

$\frac{7x}{7}=\frac{-63}{7}$

$x=-9$

4) $3.2(x+7.2)=1.2(4.2-x)$

$3.2x+23.04=5.04-1.2x$

$4.4x+23.04=5.04-23.04$

$4.4x=-18$

$x=-4.0\overline{9}$

5) $3x-2+5x=19$

$8x-2=19$

$8x=21$

$x=\frac{21}{8}$

6) $12x+5=50-3x$

$15x+5=50$

$\frac{15x}{15}=\frac{45}{15}$

$x=3$

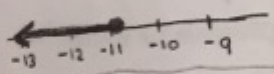
Part 2) Solve and graph each inequality

1) $3x+7\geq 4x+18$

$7\geq x+18$

$-11\geq x$

$x\leq -11$

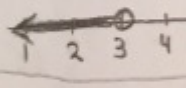


2) $18x-10<44$

$18x<54$

$x<\frac{54}{18}$

$x<3$



3) $\frac{1}{2}(x+7)\leq 2(3x-1)$

$\frac{1}{2}x+\frac{7}{2}\leq 6x-2$

4) $-12>\frac{2}{3}c+4$

$-16>\frac{2}{3}c$

$-48>2c$

Part 2) Solve and graph each inequality

1) $3x + 7 \geq 4x + 18$

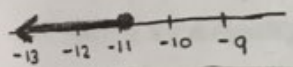
$-3x \quad -3x$

$7 \geq x + 18$

$-18 \quad -18$

$-11 \geq x$

$x \leq -11$



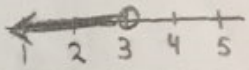
2) $18x - 10 < 44$

$+10 \quad +10$

$18x < 54$

$x < \frac{54}{18}$

$x < 3$



3) $\frac{1}{2}(x + 7) \leq 2(3x - 1)$

$(2)\frac{1}{2}x + \frac{7}{2}(2) \leq 6x(2) - 2(2)$

$x + 7 \leq 12x - 4$

$-x \quad -x$

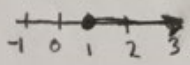
$7 \leq 11x - 4$

$+4 \quad +4$

$11 \leq 11x$

$1 \leq x$

$x \geq 1$



4) $-12 > \frac{2}{3}c + 4$

$-4 \quad -4$

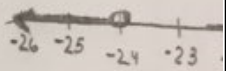
$-16 > \frac{2}{3}c$ (3)

$-48 > 2c$

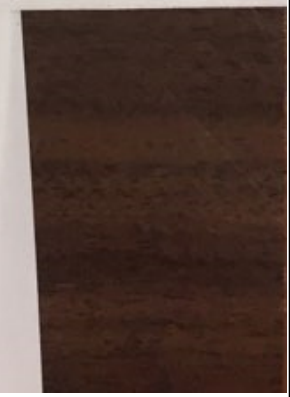
$\frac{-48}{2} > \frac{2c}{2}$

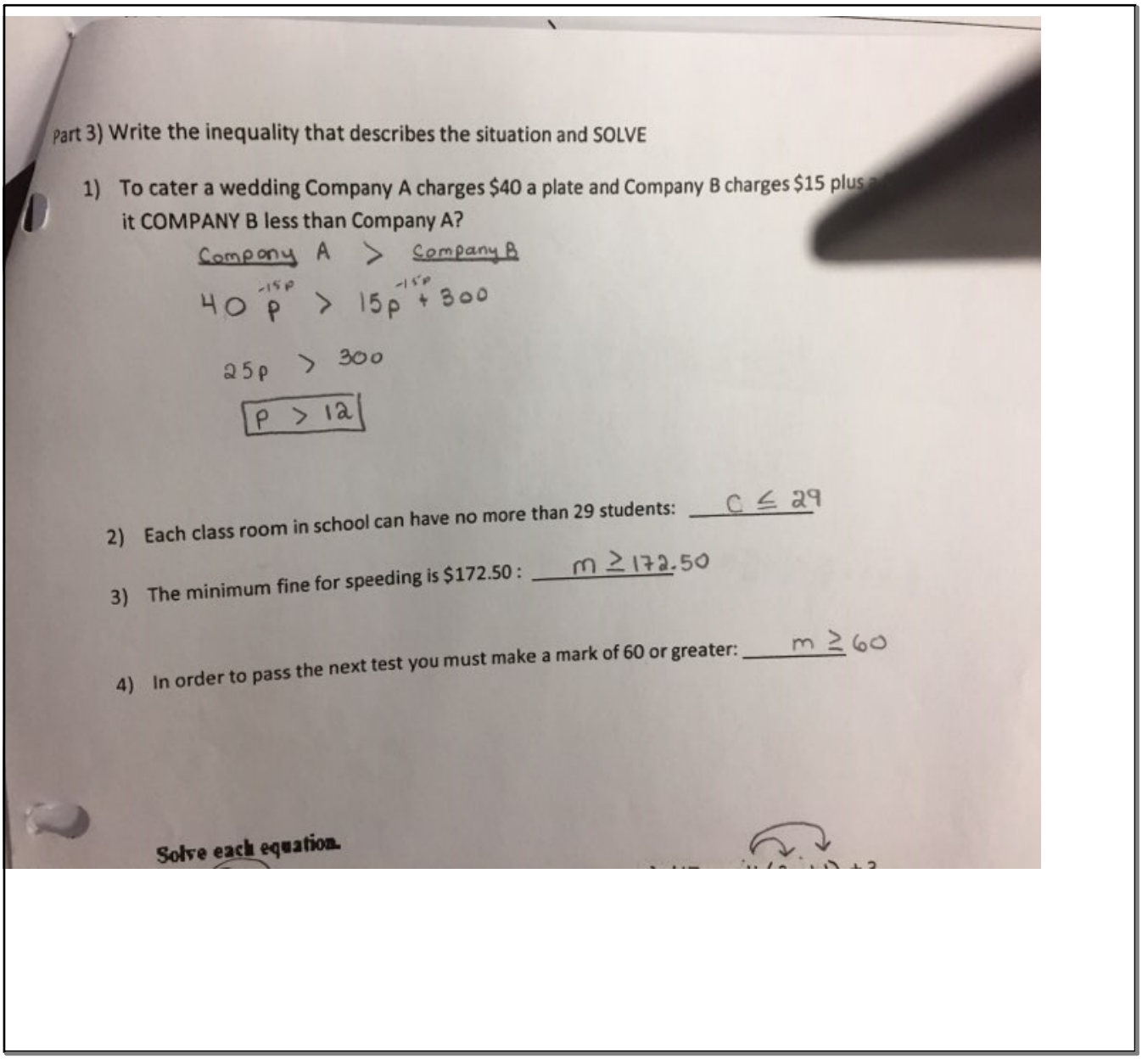
$-24 > c$

$c < -24$



4) $-12 > \frac{2}{3}c + 4$





Part 3) Write the inequality that describes the situation and SOLVE

1) To cater a wedding Company A charges $40 a plate and Company B charges $15 plus
it COMPANY B less than Company A?

Company A > Company B

$40p > 15p + 300$ (−15p, −15p)

$25p > 300$

$\boxed{p > 12}$

2) Each class room in school can have no more than 29 students: $c \leq 29$

3) The minimum fine for speeding is $172.50 : $m \geq 172.50$

4) In order to pass the next test you must make a mark of 60 or greater: $m \geq 60$

Solve each equation.

Solve each equation.

1) $-7(2b+3) = -7$

$-14b - 21 = -7$ (+21)

$\frac{-14b}{-14} = \frac{+14}{-14}$

$b = -1$

2) $47 = -4(3n+1) + 3$

$47 = -12n - 4 + 3$

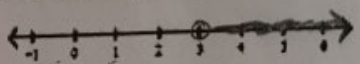
$47 = -12n - 1$ (+1)

$\frac{48}{-12} = \frac{-12n}{-12}$

$-4 = n$

Solve each inequality and graph its solution.

3) $20 < 5(1+x)$



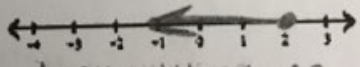
$20 < 5 + 5x$ (−5)

$\frac{15}{5} < \frac{5x}{5}$

$3 < x$

$x > 3$

4) $6(1+4v) + 4v \leq -22$



$6 + 24v + 4v \leq -27$

$6 + 28v \leq -22$ (−6)

$\frac{28v}{28} \leq \frac{-28}{28}$

$v \leq -1$

$v \leq -1$

4) $-12 > \frac{2}{}$