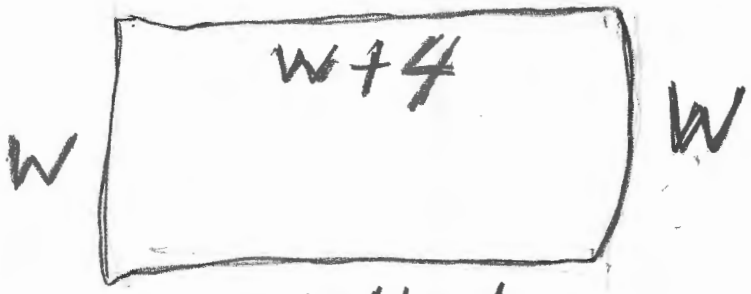
2.5 9-16-13

DISCLAIMER: NOTES COULD CONTAIN SMALL ERRORS.

27

Quiz related

$P = 2 \cdot (L + W)$



$w+4=L$

$w+4+w+w+4+w =$ Perimeter

SIMPLE COUNTING

$(w+4+w)+(w+4+w) = P$

$2 \cdot (w+4+w) = P$

$2 \cdot (L+w) = P$

$2 \cdot (w+4+w) = 92$

$2 \cdot (2w+4) = 92$

$4w+8 = 92$

$4w = 84$

$$\frac{4w}{4} = \frac{84}{4}$$

$w = 21$ m.

$L = w + 4 = \boxed{25\text{ m}}$

$$4\overline{)84} \quad 21 \quad -8\downarrow \quad 4$$

2.6 GRID

example		problems
1	→	9, 11
2	→	13, 15
3	→	17, 19, 23, 25
4	→	35, 37
5	→	79, 81
6	→	55, 63
7	→	77
8	→	95

2.6

Example problems

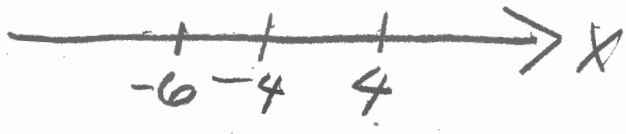
1 → 23

2 → 27

Solutions:

2.6

(9.) $x > -4$



(a) 4 TRUE: $4 > -4$

(b) -6 False: $-6 > -4$

(c) -4 False: $-4 > -4$

(11.) $y \leq 19$

(a) 18.99 TRUE (b) 19.01 false

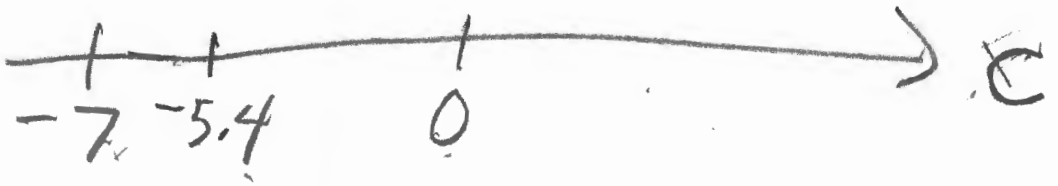
(c) 19 TRUE: $19 \leq 19$ ← less than OR EQUAL TO

(13) $c \geq -7$

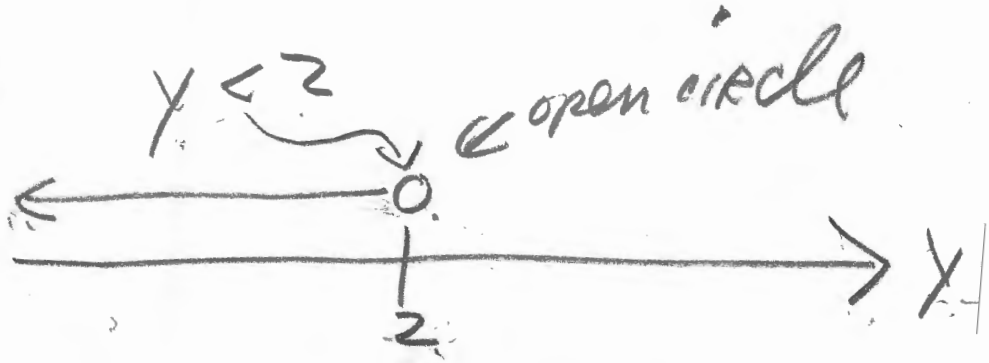
(a) 0 TRUE $(0 \geq -7)$

(b) -5.4 TRUE $-5.4 \geq -7$

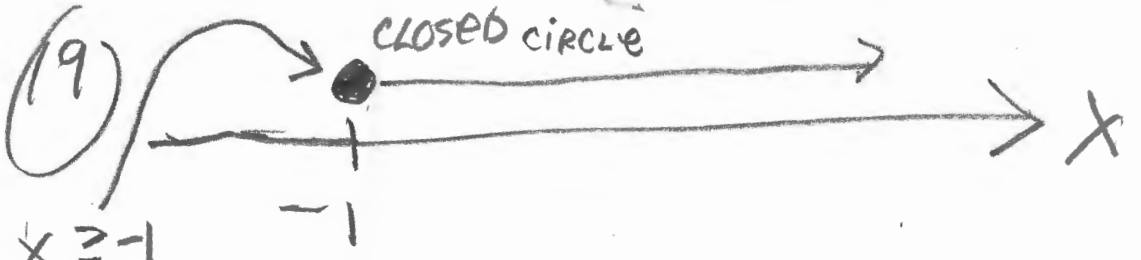
NUMBER line



(17.)



(19)

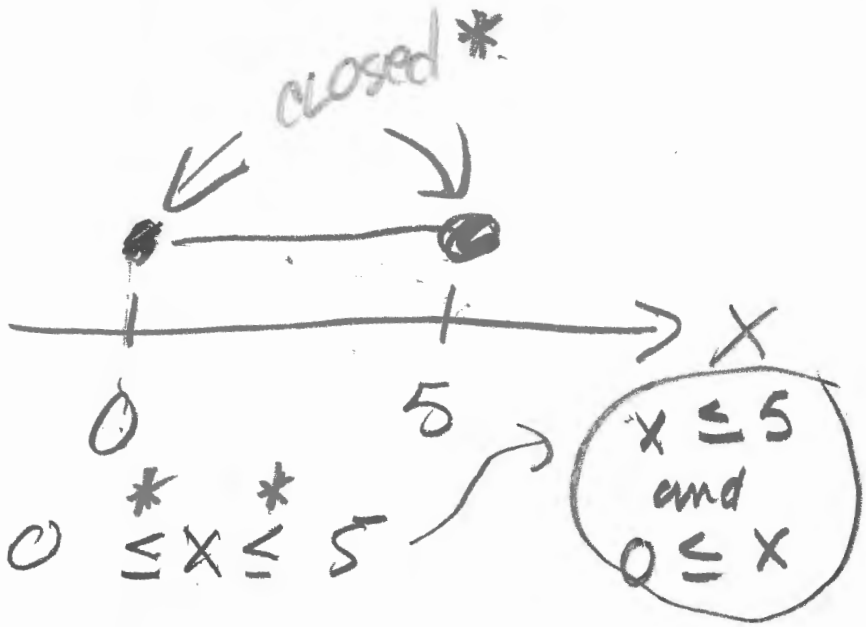


$x \geq -1$

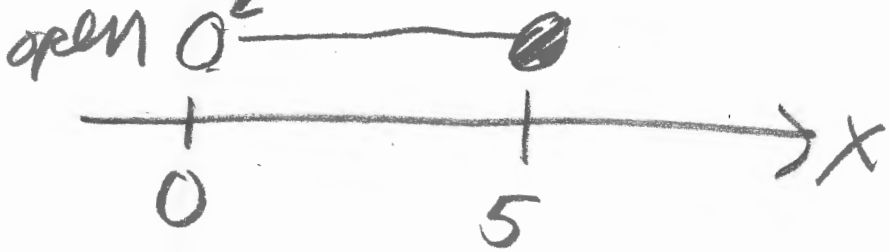
greater than OR = TO

NOTE: $-1 \leq x$ same thing

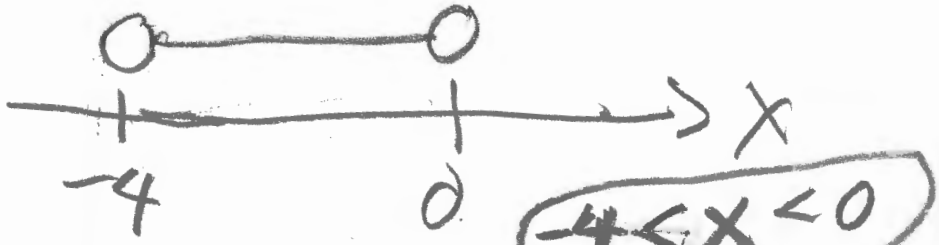
(20)



NOTE: IF $0 < x \leq 5$



(25.)

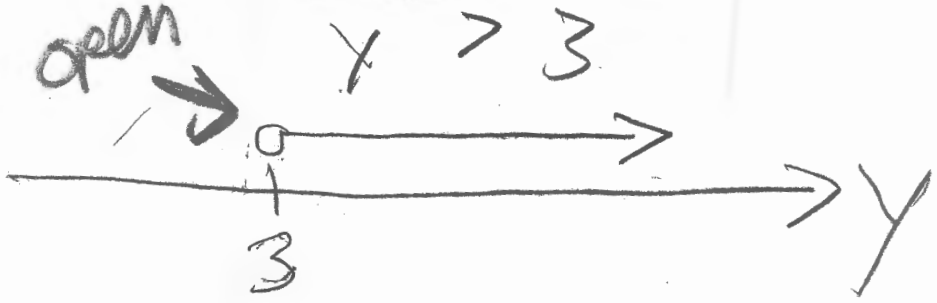


(35.)

$y + 6 > 9$

$-6 \quad -6$

$y > 3$



(57.) $x + 9 \leq -12$

$-9 \quad -9$

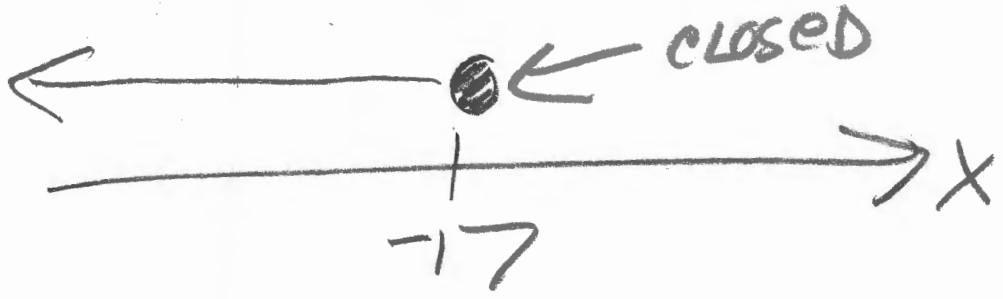
$x \leq -17$

THINK:

$x + 9 = 12$

$-9 \quad -9$

$x = -17$



(59) $7 - 9y \leq 4 - 7y$

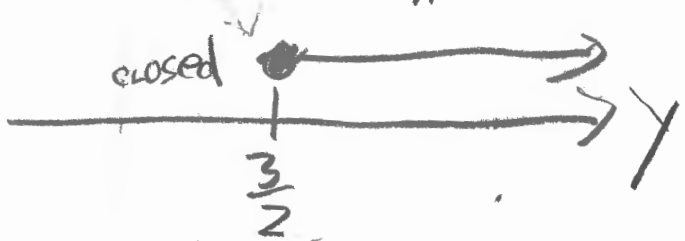
$+9y \qquad +9y$

$7 \leq 4 + 2y$

$-4 \qquad -4$

$3 \leq 2y$

$\frac{3}{2} \leq y$ ⟸ (NOTE! $\frac{3}{2} \leq \frac{2y}{2}$)



(9) ALT.

$7 - 9y \leq 8 - 7y$

$+7y \quad +7y$

$7 - 2y \leq 4$

$-7 \quad -7$

$-2y \leq -3$

$\frac{-2y}{-2} \geq \frac{-3}{-2}$

$y \geq \frac{3}{2}$

• Divide by a negative number means "switch" INEQUALITY sign DIRECTION

$\frac{3}{2}$

SAME graph

(81) (8

$33-12x < 4x+97$

$+12x \quad +12x$

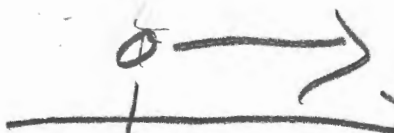
$33 < 16x+97$

$-97 \quad -97$

$-64 < 16x$

$\frac{-64}{16} < \frac{16x}{16}$ DO NOT switch

$-4 < x$



ALT.

IF you divide by a negative NUMBER

$33-12x < 4x+97$

$-4x \quad -4x$

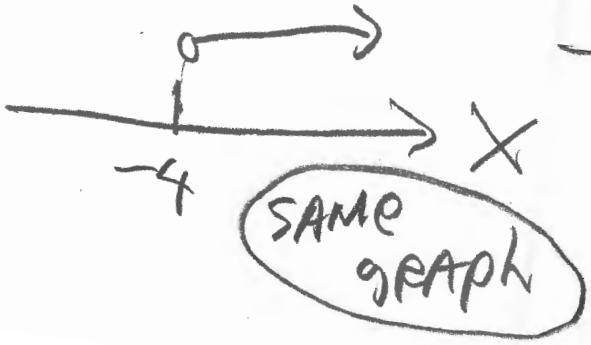
$33-16x < 97$

$-33 \quad -33$

$-16x < 64$

$\frac{-16x}{-16} > \frac{64}{-16}$ ← "switch"

$x > -4$ SAME!

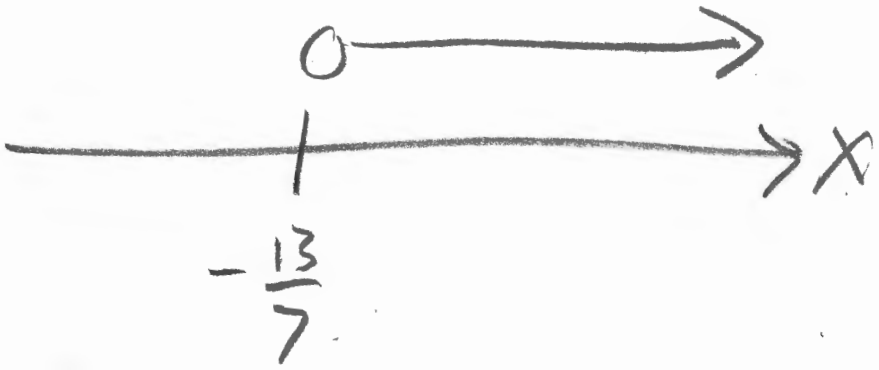


55

$$-7x < 13$$

$$\frac{-7x}{-7} > \frac{13}{-7}$$ switch

$$x > -\frac{13}{7}$$

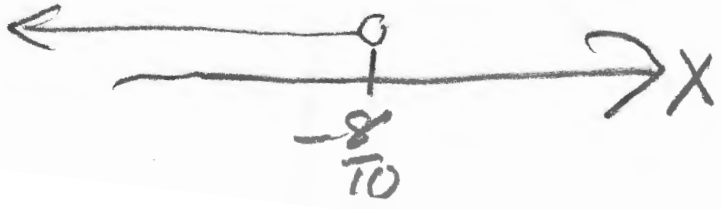


63.

$$-\frac{8}{5} > 2x$$

$$-\frac{8}{5 \cdot 2} > \frac{2x}{2}$$

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



DO NOT switch IF you don't divide by a negative.

77.

$$6-4y > 6-3y$$

$$+3y \quad +3y$$

$$6-y > 6$$

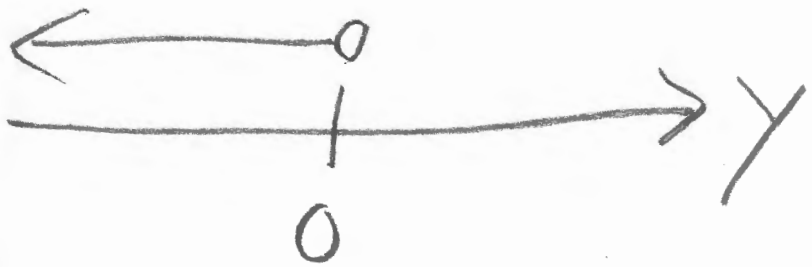
$$-6 \quad -6$$

$$-y > 0$$

$$y < -0 \quad (-0=0)$$

$$y < 0$$

switch if you move - to other side



(11

(9)

ALT.

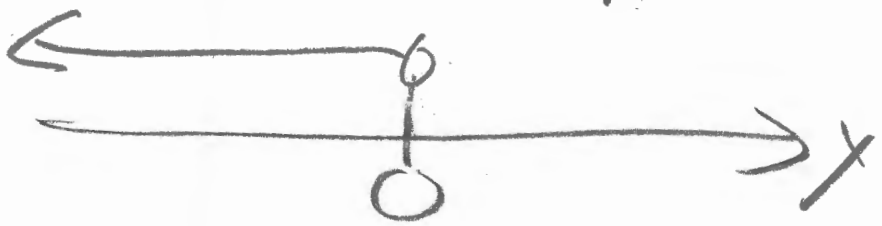
$$6 - 4y > 6 - 3y$$

$+4y \qquad +4y$

$$6 > 6 + y$$

$-6 \qquad -6$

$$0 > y$$



SAME graph

(95)

$3\cdot(r-6)+2 < 4\cdot(r+2)-21$

$3r-18+2 < 4r+8-21$

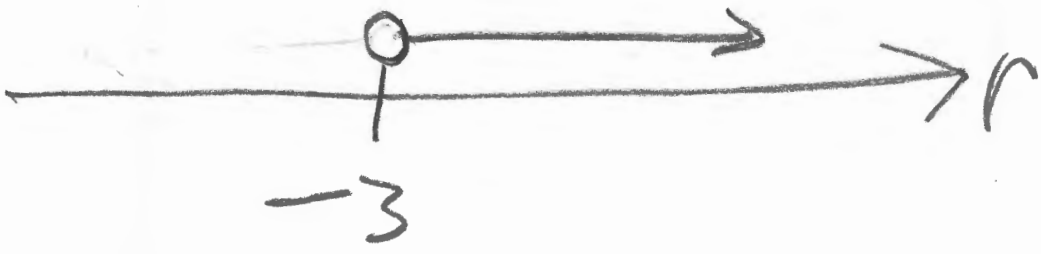
$3r-16 < 4r-13$ IMPORTANT

$-3r \quad -3r$

$-16 < r-13$

$+13 \quad +13$

$-3 < r$



ALT: $3r-16 < 4r-13$

$-4r \quad -4r$

$-r-16 < -13$

$+16 \quad +16$

95 (ALT)

$-r < 3$

$r > -3$

MOVE — AND switch

SAME graph

(2.7) (23) BILLED at LEAST $150

$150 \leq$ BILL

$150 \leq \$55 + \frac{\$40}{hr} \cdot t$

$150 \leq 55 + 40t$

$-55 \quad -55$

$95 \leq 40t$

(23)

$$\frac{95}{40} \leq \frac{40t}{40}$$

$$\frac{95}{40} \leq t$$

$$2.375 = 2.38\,hr$$

$$40\overline{)95.0000}$$

80

150

120

300

280

200

200

$$2.38\,hr \leq t$$

(27)

average

$$\frac{73+75+89+91+x}{5} \geq 85\%$$

$$\frac{328+x}{5} \geq 85$$

$$5 \cdot \frac{(328+x)}{5} \geq 5 \cdot 85$$

$$328 + x \geq 425$$

$$-328 \quad -328$$

$$x \geq 97$$

1
73
75
89
91
17) 328

15
17
32

85
5
425

QUIZ 4 MATH 65 AU 13; THE FIRST 8 PROBLEMS ARE IN-CLASS.

1. SEC. 2.1 Solve for w: $w - 5 = 22$

2. SEC. 2.1 Solve for x: $-x + 2 = 91$

3. Sec. 2.2 Solve for x: $\frac{2}{3}x - 1 = 5$

4. Sec. 2.2 Solve for x: $7x - 8 = 27$

5. Sec 2.2 Solve for x: $2(3 + 4x) - 5 = 17$.

The next 3 problems are from 2.3

6. Solve for w : $P = 2L + 2w$

7. Solve for x : $3y + 2x = 6$

8. Solve for h: $E = \frac{1}{2}ah + \frac{1}{2}ch$

Solutions on

$w - 5 = 22$
$+5 \quad +5$
$w = 27$

$-x + 2 = 91$
$-2 \quad -2$
$-x = 89$
$x = -89$

$7x - 8 = 27$
$+8 \quad +8$
$7x = 35$
$x = 5$

$\frac{2}{3}x - 1 = 5$
$+1 \quad +1$
$\frac{2}{3}x = 6$
$\frac{3}{2} \cdot \frac{2}{3}x = \frac{3}{2} \cdot 6$
$x = \frac{18}{2}$
$x = 9$

THE FOLLOWING PROBLEMS ARE TAKE HOME DUE WED 9-18 AT START OF CLASS.

9. Sec. 2.3 Solve for n . $m = 19 - 5(x - n)$

10. Sec. 2.4

(a) 15 is what percent of 60? Translate this AND SOLVE. (b) What number is 30 % of 240? Translate this AND SOLVE

11. Sec. 2.4.

(a) Translate and solve for x in percent form: 6 is what percent of 24 ? (b) Translate and solve. What number is 20 % of 80 ?

12. Sec. 2.5.

(a) Translate and solve. Two fewer than ten times a number is 68? What is the number?

(b) The perimeter of the state of Wyoming is 1280 mi. The width is 90 mi less than the length. What is the length?

DUE WED

Quiz 4

(5.)

$$2\cdot(3+4x)-5=17$$
$$6+8x-5=17$$
$$1+8x=17$$
$$8x=16$$
$$x=2$$

(6) $P=2L+2W$

$-2L \quad -2L$

$$P-2L=2W$$
$$\frac{P-2L}{2}=\frac{2W}{2}$$
$$\boxed{\frac{P-2L}{2}=W}$$

(7.)

$$3y+2x=6$$

$-3y \quad -3y$

$$2x=6-3y$$
$$\frac{2x}{2}=\frac{6-3y}{2}$$
$$x=\frac{6-3y}{2}$$

(8.)

$$E = \frac{1}{2}ah + \frac{1}{2}ch$$

clear $\frac{1}{2}$:

$$2 \cdot E = 2 \cdot \left(\frac{1}{2}ah + \frac{1}{2}ch\right)$$

$$2E = ah + ch$$

$$2E = (a+c)h$$

$$\frac{2E}{(a+c)} = \frac{(a+c)}{(a+c)}h$$

$$\boxed{\frac{2E}{(a+c)}} = h$$

9-16-13 note

student question:

$-(a+b)$

$= (-1)\cdot(a+b)$

$= (-1)\cdot a + (-1)\cdot b$

$= -a - b$

Test 1 MONDAY

1.1 – 1.8
2.1 – 2.5 } study Q1, Q2, Q3 and Q4

E.C. on 2.6
2.7

HINT TO #9, Quiz 4

Like #9

FOR w

$$x = 22 - 6(y - w)$$

$$x = 22 - 6y + 6w$$

$+6y \qquad +6y$

$$x + 6y = 22 + 6w$$

$-22 \qquad -22$

$$x + 6y - 22 = 6w$$

$$\frac{x + 6y - 22}{6} = \frac{6w}{6}$$

$$\boxed{\frac{x + 6y - 22}{6} = w}$$

$$\frac{x}{6} - y - \frac{22}{6} = w$$