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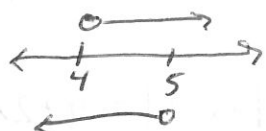
48) $\angle 1 = x$ $x + 3x + 20 = 180^\circ$
 $\angle 2 = 3x + 20$ $4x + 20 = 180^\circ$
 $4x = 160^\circ$
 $x = 40^\circ$
 $\angle 2 = 3 \cdot 40 + 20 = 140^\circ$

49) $\angle 1 = x$ $x + x - 22 = 90$
 $\angle 2 = x - 22$ $2x - 22 = 90$
 $2x = 112$
 $x = 56$
 $\angle 1 = 56^\circ$
 $\angle 2 = 56 - 22 = 34^\circ$

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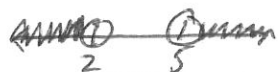
45) $5a - 4 > 16$ or $3a + 2 < 17$
 $5a > 20$ $3a < 15$
 $a > 4$ or $a < 5$

All Real Solutions



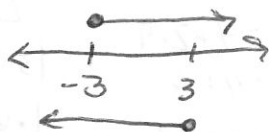
46) $6b + 3 < 15$ or $4b - 2 > 18$
 $6b < 12$ $4b > 20$

$b < 2$ or $b > 5$



47) $6c \leq 18$ or $-5c \leq 15$
 $c \leq 3$ or $c \geq -3$

All real Solutions



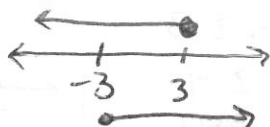
48) $8d < -64$ and $5d > 25$
 $d < -8$ and $d > 5$



No solutions

49) $4x \leq 12$ or $-7x \leq 21$
 $x \leq 3$ or $x \geq -3$

All real Solutions



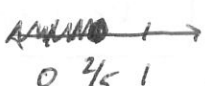
50) $15x > 30$ and $18x < -36$
 $x > 2$ and $x < -2$



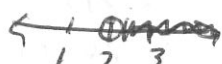
No solutions

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41) $4 - 5z \geq 2$
 $-5z \geq -2$
 $z \leq \frac{2}{5}$

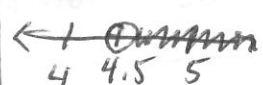


42) $2(5 - 3x) < x - 4(3 - x)$
 $10 - 6x < x - 12 + 4x$
 $10 - 6x < 5x - 12$
 $10 - 11x < -12$
 $-11x < -22$
 $x > 2$

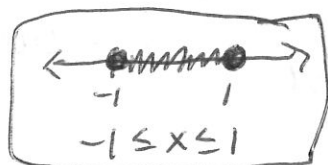


43) $0.3(y - 2) > \frac{1}{2}(6 - y)$
 $0.3y - 0.6 > 3 - 0.5y$
 $0.8y - 0.6 > 3$
 $0.8y > 3.6$

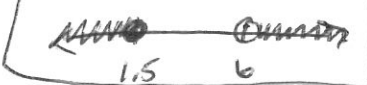
$y > 4.5$



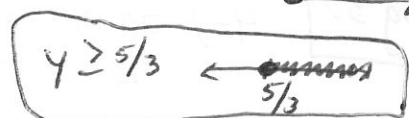
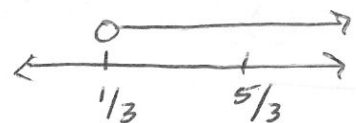
44) $5 \leq 9 - 4x \leq 13$
 $-4 \leq -4x \leq 4$
 $1 \geq x \geq -1$



45) $3 \geq 2x$ or $x - 4 \geq 2$
 $1.5 \geq x$ or $x \geq 6$



46) $6y \geq 2$ and $y - 5 \geq -2y$
 $y \geq \frac{1}{3}$ and $3y - 5 \geq 0$
 $3y \geq 5$
 $y \geq \frac{5}{3}$ and $y \geq \frac{1}{3}$



48) $|2x + 8| = 3x + 7$

$2x + 8 = 3x + 7$ or $2x + 8 = -3x - 7$
 $8 = x + 7$ or $8 = -5x - 7$
 $1 = x$ or $15 = -5x$
 $-3 = x$ ← extraneous
 $|2 \cdot 1 + 8| = 3 \cdot 1 + 7$
 $|2 + 8| = 3 + 7$
 $|10| = 10 \checkmark$
 $|2 \cdot (-3) + 8| = 3 \cdot (-3) + 7$
 $|-6 + 8| = -9 + 7$
 $|2| \neq -2 \quad \times$

49) $|3x - 5| = 4 + 2x$

$3x - 5 = 4 + 2x$ or $3x - 5 = -4 - 2x$
 $x - 5 = 4$ or $5x - 5 = -4$
 $x = 9$ or $5x = 1$
 $x = \frac{1}{5}$
 $|3 \cdot 9 - 5| = 4 + 2 \cdot 9$
 $|27 - 5| = 4 + 18$
 $|22| = 22 \checkmark$
 $|3 \cdot \frac{1}{5} - 5| = 4 + 2 \cdot \frac{1}{5}$
 $|-4.4| = 4.4 \checkmark$

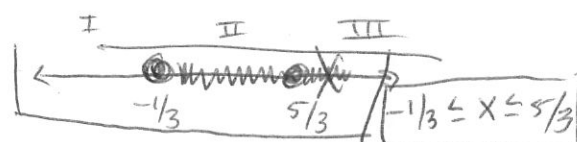
50) $|x - 4| + 3 = 1$
 $|x - 4| = -2$

No solution

* Can't equal a negative

51) $|3x - 2| + 4 \leq 7$
 $|3x - 2| \leq 3$

$3x - 2 = 3$ or $3x - 2 = -3$
 $3x = 5$ or $3x = -1$
 $x = \frac{5}{3}$ or $x = -\frac{1}{3}$

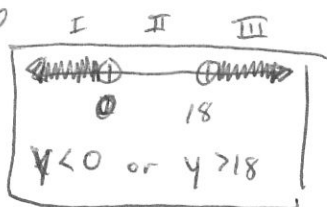


I $|3(-\frac{1}{3}) - 2| + 4 \leq 7$
 $9 \leq 7$
 F
 II $|3(\frac{5}{3}) - 2| + 4 \leq 7$
 $6 \leq 7$
 T
 III $|3(2) - 2| + 4 \leq 7$
 $8 \leq 7$
 F

52) $4|y - 9| \geq 36$

$|y - 9| \geq 9$

$y - 9 = 9$ or $y - 9 = -9$
 $y = 18$ or $y = 0$



I $4|-1 - 9| \geq 36$
 $40 \geq 36$
 T

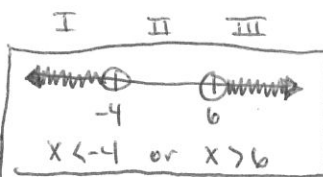
II $4|1 - 9| \geq 36$
 $32 \geq 36$
 F

III $4|19 - 9| \geq 36$
 $40 \geq 36$
 T

53) $\frac{2}{5}|3x - 3| - 4 \geq 2$

$\frac{2}{5}|3x - 3| \geq 6$
 $|3x - 3| \geq 15$

$3x - 3 = 15$ or $3x - 3 = -15$
 $x = 6$ or $x = -4$

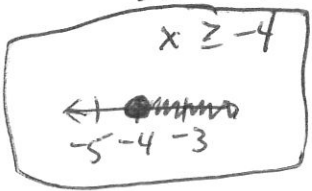


I $\frac{2}{5}|3(-5) - 3| - 4 \geq 2$
 $3.2 \geq 2$
 T

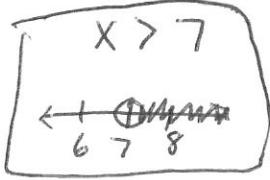
II $\frac{2}{5}|3(0) - 3| - 4 \geq 2$
 $-2.8 \geq 2$
 F

III $\frac{2}{5}|3(7) - 3| - 4 \geq 2$
 $3.2 \geq 2$
 T

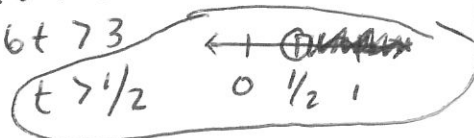
23) $3x+17 \geq 5$
 $3x \geq -12$
 $x \geq -4$



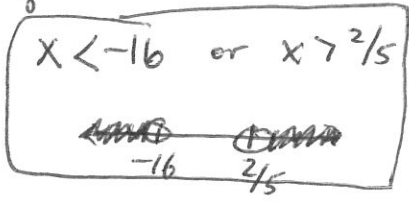
24) $25-2x < 11$
 $-2x < -14$
 $x > 7$



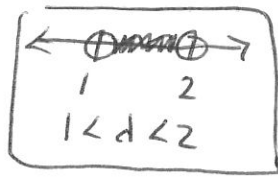
25) $7t > 4t + 3(1-t)$
 $7t > 4t + 3 - 3t$
 $7t > t + 3$
 $6t > 3$
 $t > 1/2$



26) $\frac{3}{8}x < -6$ or $5x > 2$



27) $2 < 10 - 4d < 6$
 $-8 < -4d < -4$
 $2 > d > 1$



28) $4-x = |2-3x|$

$4-x = 2-3x$ or $-4+x = 2-3x$

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

$x = -1$

$4-1 = |2-3(-1)|$
 $5 = |2+3|$
 $5 = |5| \checkmark$

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

$x = 1.5$

$4-1.5 = |2-3(1.5)|$
 $2.5 = |2-4.5|$
 $2.5 = |-2.5| \checkmark$

29) $|4x+4| = 8x+16$

$4x+4 = 8x+16$ or $4x+4 = -8x-16$

$-4x+4 = 16$

$-4x = 12$
 $x = -3$ ext. sol.

$|4(-3)+4| = 8(-3)+16$
 $|-12+4| = -24+16$
 $|-8| = -8$
 $8 \neq -8 \quad \times$

$12x+4 = -16$

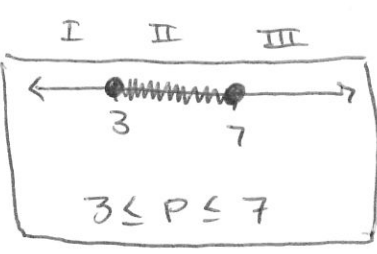
$12x = -20$

$x = -5/3$

$|4(-5/3)+4| = 8(-5/3)+16$
 $|-20/3+4| = -40/3+16$
 $|-6\frac{2}{3}+4| = -13\frac{1}{3}+16$
 $|-2\frac{2}{3}| = 2\frac{2}{3} \checkmark$
 $2\frac{2}{3} = 2\frac{2}{3} \checkmark$

30) $|5-p| \leq 2$

$5-p = 2$ $5-p = -2$
 $-p = -3$ $-p = -7$
 $p = 3$ $p = 7$



I $|5-0| \leq 2$
 $5 \leq 2 \quad F$

II $|5-4| \leq 2$
 $1 \leq 2 \quad T$

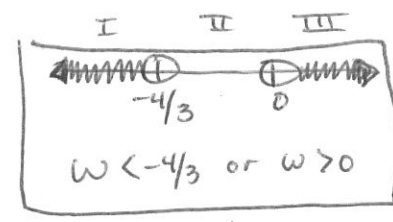
III $|5-8| \leq 2$
 $3 \leq 2 \quad F$

31) $5|3w+2|-3 > 7$

$5|3w+2| > 10$

$|3w+2| > 2$

$3w+2 = 2$ $3w+2 = -2$
 $3w = 0$ $3w = -4$
 $w = 0$ $w = -4/3$



I $5|3(-2)+2|-3 > 7$
 $17 > 7 \quad T$

II $5|3(-1)+2|-3 > 7$
 $2 > 7 \quad F$

III $5|3(1)+2|-3 > 7$
 $22 > 7 \quad T$