Steps for Absolute Value Inequalities

1. Isolate Absolute Value on the left side
2. Decide if AND OR
   < >
3. Split into 2 inequalities without ab. value bars
   * The 1st inequality = Copy
   * The 2nd inequality... Flip the inequality and make it the opposite.
4. Solve for x.

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According to Famous TV Critic Bube Tube, Why Is Television Called a Communications "Medium"?

Solve each open sentence. Find your answer below and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

(1) $|x + 2| = 7$
(2) $|3x - 6| = 15$
(3) $|9 + 4x| = 1$
(4) $|20 - 7x| = 8$

Answers:

(ET) $1\frac{1}{2}, 6$
(EN) $7, -3$
(EI) $5, -9$
(WE) $1\frac{5}{7}, 4$
(SM) $9, -4$
(HE) $-2, -2\frac{1}{2}$

(5) $|n| > 3$
(6) $|n| < 4$
(7) $|n - 6| \geq 7$
(8) $|n + 3| \leq 10$

Answers:

(IT) $-4 < n < 4$
(LA) $n \geq 3$ or $n \leq -13$
(AR) $-13 \leq n \leq 7$
(BE) $n \geq 13$ or $n \leq -1$
(US) $n > 3$ or $n < -3$
(EA) $4 \leq n \leq 13$

(9) $|2d - 8| > 12$
(10) $|5d + 5| < 20$
(11) $|3d + 18| \leq 6$
(12) $|5 - 2d| > 7$

Answers:

(AP) $-6 \leq d \leq 4$
(TS) $d > 10$ or $d < -2$
(CA) $d < -1$ or $d > 6$
(NE) $-5 < d < 3$
(OR) $-8 \leq d \leq -4$
(PA) $d < -3$ or $d > 7$

(13) $6|y + 1| = 60$
(14) $3|y - 8| + 15 = 21$
(15) $9|2y - 4| \geq 36$
(16) $|7y + 14| - 5 < 30$

Answers:

(AB) $8, -5$
(RR) $-7 < y < 3$
(NE) $10, 6$
(RE) $y \geq 7$ or $y \leq 2$
(DO) $9, -11$
(LL) $y \geq 4$ or $y \leq 0$

7	12	5	1	9	14	6	3	16	8	2	11	4	15	13	10

OBJECTIVE 2–g: To solve equations and inequalities involving absolute value.