

Collaboration and help from tutors are allowed.

1. Factor: $22ax^2 + 77ax - 209a - 10bx^2 - 35bx + 95b$

2. Solve for x: $(x - 4)(x + 3) = (x + 5)^2$

3. Solve for y: $\frac{2}{y+1} + \frac{4}{5y-1} = \frac{142}{(y+1)(5y-1)}$

4. Solve for n: $(n - 4567)^2 = 80,550,625$

5. Solve for x: $2 + \frac{19}{x} = \frac{6}{x^2}$

6. Find the positive number that when multiplied by 15 is equal to its square subtracted from 34.

7. Solve for all values of x: $\sqrt[4]{x^2 + 19} = \sqrt{10}$

8. Solve for all values of x: $\sqrt{12 + x} = x$

9. Solve for n: $\sqrt{n^2 + 7n - 8} = n + 3$

10. Solve for all values of y:
 $y^{2/5} - 7y^{1/5} + 6 = 0$

11. Solve for a: $-11 < \frac{2a-7}{5} \leq 17$

12. Solve for k: $-1 < \frac{13-k}{5} \leq 10$

13. Solve for x:
 $(2350x + 1)^2 - 4702(2350x + 1) + 4701 = 0$

14. Find the number whose absolute value is 54 more than the number itself.

Answers
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.

Solve each of the following inequalities. If no solution exists, write "NS"

15. Solve for x: $|5x - 174| = 189$
16. Solve for x: $2|3x + 7| - 25 = 31$
17. Solve for x: $20 + 10|28 - x| < 180$.
18. Solve for n: $|5n - 11| + 27 = 19$
19. Solve for y: $687 + 2|y + 38| < 569$.
20. Solve for b: $1 \leq |2b - 5| < -3$

You may write anything you wish below this line.

Answers
15.
16.
17.
18.
19.
20.