

1. Solve: $15x = 2x^2 + 16$

2. *Define your variable, write an equation, and then solve the following problem. Give the final answer in a sentence.

The width of a rectangular flowerbed is 7 feet less than its length. The area is 18 square feet. Find the length and width of the flowerbed.

3. *Solve: $x^2 + 4x - 12 < 0$

Express the solution

using solution set notation:

using interval notation:

4. *Solve: $\frac{x+3}{x-4} \geq 0$

Express the solution

using solution set notation:

using interval notation:

5. Find $f(-13)$ for: $f(x) = \sqrt[3]{2x-1}$

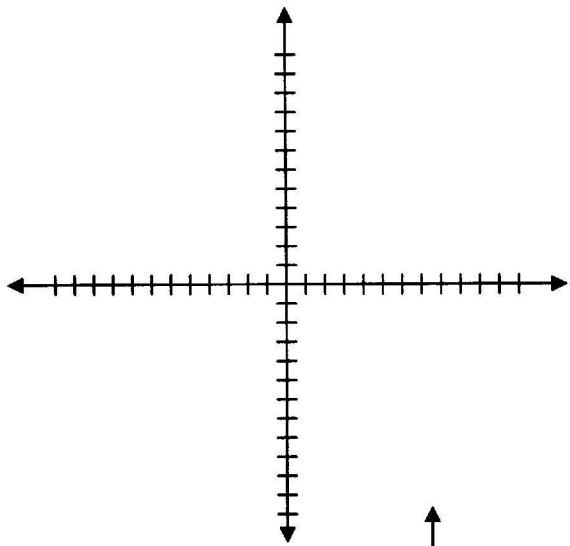
6. Rewrite with rational exponents: $(\sqrt[3]{7xy})^4$

7. Simplify: $\sqrt[5]{p^{14}q^9r^{23}}$

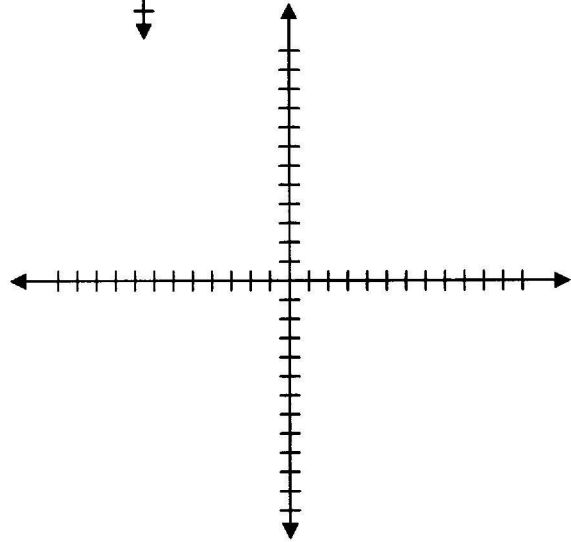
8. *Solve: $\sqrt[3]{3y+6} + 2 = 5$

9. *Solve for t : $L = \frac{Mt + g}{t}$

10. *Graph: $f(x) = |x| - 4$
Show at least 7 points in the table.



11. *Graph: $f(x) = x^2 - 1$
Show at least 7 points in the table.



12. Simplify: $\left(\frac{x^3 y}{pq^2}\right)^{-3}$

13. *Subtract and simplify: $\frac{4}{5a^2 - 5a} - \frac{2}{5a - 5}$

14. Find the domain: $f(x) = \frac{15}{3x-8}$

15. *A mathematics instructor asked her students to keep track of how much time each spent studying the chapter on percent notation in her basic mathematics course. She collected the information, together with test scores from that chapter's test, in the table below.

- a) Use the two points reporting data for 9 hours of study time and 23 hours of study time and find a linear function that fits the data. (You can ignore the other lines of data in the chart.)
- b) Use the function to predict the test score of someone who has studied for 18 hours.

Study Time, x (in hours)	Test Grade, y (in percent)
9	74
11	94
13	81
15	86
16	87
17	81
21	87
23	92

16. Define your variable and write an equation that could be used to solve the following problem.
DO NOT SOLVE THE EQUATION.

Josh left a 15% tip for a meal. The total cost of the meal, including the tip, was \$30.50.
What was the cost of the meal before the tip was added?

17. Define your variable and write an equation that could be used to solve the following problem.
DO NOT SOLVE THE EQUATION.

The product of two consecutive odd integers is 255. Find the integers.

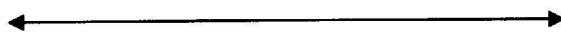
18. Define your variables and write a system of equations that could be used to solve the following problem. DO NOT SOLVE THE EQUATIONS.

Madeline goes to a bank and gets change for a \$50 bill consisting of all \$5 bills and \$1 bills. There are 22 bills in all. How many of each kind are there?

19. *Solve: $3(r - 6) + 2 > 4(r + 2) - 21$

Express the solution

as a graph:



using solution set notation:

using interval notation:

20. Graph: $2x + 3y \geq 6$

