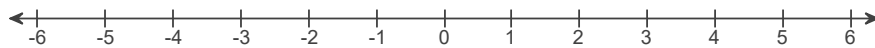


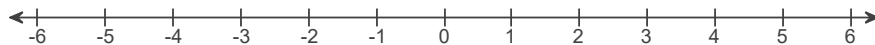
1. Plot the following numbers on the number line.

-5, 0, 5

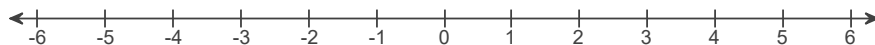
Plot -5.



Plot 0.



Plot 5.



2. Simplify the following.

$$-|4|$$

$$-|4| = \boxed{-4}$$

3. Simplify. Write the answer in lowest terms.

$$-\frac{3}{14} + \left(-\frac{13}{20}\right)$$

$$-\frac{3}{14} + \left(-\frac{13}{20}\right) = \boxed{-\frac{121}{140}} \text{ (Type an integer, fraction, or mixed number.)}$$

4. Simplify.

$$\frac{2}{35} \div \frac{10}{21}$$

$$\frac{2}{35} \div \frac{10}{21} = \boxed{\frac{3}{25}} \text{ (Type an integer or a simplified fraction.)}$$

5. Evaluate the expression for $a = -2$, $b = 5$ and $c = -2$.

$$b^2 - 4ac$$

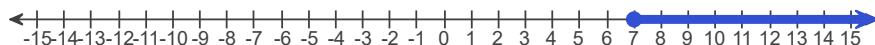
$$b^2 - 4ac = \boxed{9} \text{ (Simplify your answer.)}$$

6. Write the statement as an inequality.

x is less than -2

The inequality is $\boxed{x < -2}$.

7. Write the following interval in interval notation.



The number line represents the interval $\boxed{[7, \infty)}$.
(Type your answer in interval notation.)

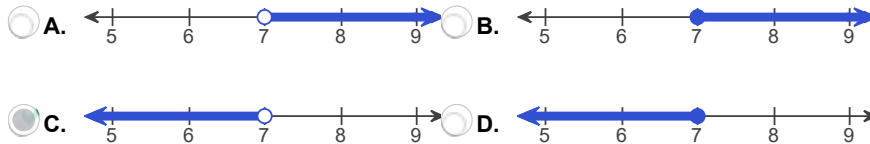
8. Solve the inequality. Write the solution in interval notation, and graph it.

$$9x + 1 < 64$$

Choose the correct solution in interval notation.

- ☐ A. $(7, \infty)$
☐ B. $(-\infty, 7]$
☐ C. $[7, \infty)$
☒ D. $(-\infty, 7)$

Choose the correct graph of the solution.



9. Solve for y.

$$3x + y = 12$$

$$y = -3x + 12$$

10. Solve the formula for the indicated variable.

$$P = c + 2b + 4a, \text{ for } c$$

$$c = P - 2b - 4a$$

(Use integers or fractions for any numbers in the expression. Simplify your answer.)

11. Add.

$$(5x^2 - 3x + 24) + (2x^2 + 9x - 46)$$

$$(5x^2 - 3x + 24) + (2x^2 + 9x - 46) = 7x^2 + 6x - 22$$

(Simplify your answer.)

12. Add.

$$(15w^2g - 3wg^2 + 3wg) + (-12w^2g - 8wg^2 + 9wg)$$

$$(15w^2g - 3wg^2 + 3wg) + (-12w^2g - 8wg^2 + 9wg) = 3w^2g - 11wg^2 + 12wg$$

13. Subtract.

$$(a^3b^2 + 12a^5b + 23a^2b^3) - (17a^2b^3 - 2a^5b + 11a^3b^2)$$

$$\text{The difference is } 14a^5b - 10a^3b^2 + 6a^2b^3. \text{ (Simplify your answer. Do not factor.)}$$

14. Subtract the polynomials.

$$(x^3 - 4x^2 - 16) - (7x^2 - 4x - 17)$$

$$(x^3 - 4x^2 - 16) - (7x^2 - 4x - 17) = x^3 - 11x^2 + 4x + 1 \text{ (Simplify your answer.)}$$

15. Simplify.

$$\sqrt{\frac{1}{4}}$$

Select the correct choice below and fill in any answer boxes in your choice.

☒ A. $\sqrt{\frac{1}{4}} = \frac{1}{2}$ (Simplify your answer. Type an exact answer, using radicals as needed.)

☐ B. The square root is not a real number.

16. Simplify.

$$\sqrt{722}$$

$\sqrt{722} = 19\sqrt{2}$ (Type an exact answer, using radicals as needed.)

17. Simplify the radical expression. Assume that all variables represent nonnegative real numbers.

$$\sqrt{x^{15}y^6}$$

$$\sqrt{x^{15}y^6} = x^7y^3\sqrt{x}$$

(Type an exact answer, using radicals as needed. Do not factor.)

18. Rewrite as a radical expression and simplify if possible. Assume all variables represent nonnegative real numbers.

$$9^{3/2}$$

$$9^{3/2} = 27$$

(Simplify your answer. Type an integer or a fraction.)

19. Solve.

$$x^2 - 10x + 16 = 0$$

The solution set is $\{2, 8\}$.

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

20.

Solve.

$$c^2 - 9 = 0$$

The solution set is $\{-3, 3\}$.

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

21. Solve.

$$t^2 - 98 = 0$$

What is the solution set?

$$\{-7\sqrt{2}, 7\sqrt{2}\}$$

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

22. Solve by extracting square roots.

$$(x - 8)^2 = 25$$

The solution set is $\{ \text{ } 3, 13 \text{ } \}$.

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

23. Solve by completing the square.

$$x^2 - 8x - 33 = 0$$

The solution set is $\{ \text{ } -3, 11 \text{ } \}$.

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)

24. Solve by completing the square.

$$y^2 + y - 6 = 0$$

The solution set is $\{ \text{ } -3, 2 \text{ } \}$.

(Simplify your answer. Type an exact answer, using radicals and i as needed. Use integers or fractions for any numbers in the expression. Use a comma to separate answers as needed.)