1. If \( x = -1 \) and \( y = -6 \), evaluate the expression.

\[
7x^2 - y^2
\]

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

○ A. The answer is \( \square \).
   
   (Type an integer or a simplified fraction.)

○ B. The expression is undefined.

2. If \( x = -7 \) and \( y = -3 \), evaluate the expression.

\[
\frac{2x - 6}{y - 2}
\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. \( \frac{2x - 6}{y - 2} = \square \)

○ B. The expression is undefined.

3. Solve the equation for \( x \).

\[
\frac{x}{2} - 1 = \frac{x}{7} + 4
\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. \( x = \square \) (Type an integer or a fraction. Simplify your answer.)

○ B. The solution is all real numbers.

○ C. There is no solution.
4. Solve the equation for \( y \).

\[
\frac{11}{2} y + \frac{21}{6} = 5y - 5
\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. \( y = \Box \) (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

5. Solve the equation.

\[
\frac{2(x + 1)}{4} = 3x - 2
\]

\( x = \Box \) (Simplify your answer.)

6. Solve the formula for the specified variable.

\( q = r + rst \) for \( s \)

\( s = \Box \)

7. Solve the formula for \( h \).

\[
S = 6\pi ch + 7\pi c^2
\]

\( h = \Box \)
8. Solve the inequality. Graph the solution set and write it in interval notation.

\[-5x + 4 \geq 2(5 - x)\]

Choose the correct graph below.

- [ ] A.
- [ ] B.
- [ ] C.
- [ ] D.

Write the solution set using interval notation.


9. Solve the inequality. Graph the solution set and write it in interval notation.

\[\frac{1}{5}(x + 5) < \frac{1}{6}(3x + 4)\]

Choose the correct graph below.

- [ ] A.
- [ ] B.
- [ ] C.
- [ ] D.

Write the answer in interval notation.

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

\[(5x)^0\]

\[(5x)^0 = \square\]

11. Simplify the following expression.

\[4^{-2} + 4^{-1}\]

\[4^{-2} + 4^{-1} = \square \text{ (Type an integer or a simplified fraction.)}\]

12. Simplify the expression.

\[\left(\frac{2u^5}{6v^2}\right)^3\]

\[\left(\frac{2u^5}{6v^2}\right)^3 = \square\]

13. Simplify the expression. Write the result using positive exponents only.

\[\frac{4ab^{-2}}{4^{-1}a^{-5}b^3}\]

\[\frac{4ab^{-2}}{4^{-1}a^{-5}b^3} = \square\]

14. Simplify the expression. Write the result using positive exponents only.

\[\left(\frac{a^{-2}b}{ab^5}\right)^{-2}\]

\[\left(\frac{a^{-2}b}{ab^5}\right)^{-2} = \square\]
15. Simplify the expression. Write the result using positive exponents only.

\[
\frac{(a^2b^{-3})^{-5}}{(2a^2b^{-1})^{-2}} = \quad \square
\]

16. Perform the indicated operation.

Subtract \((6x + 1)\) from \((8x^2 + 9x + 4)\).

\((6x + 1)\) subtracted from \((8x^2 + 9x + 4)\) is \(\square\).

17. Find the product.

\[(6x + 2)^2 = \quad \square\]

18. Find the product.

\[(3x - 7y)^2 = \quad \square\]

19. Multiply.

\[(x - 2)(x^2 - 4x + 6) = \quad \square\]
20. Multiply.

\[(5x - 2)(4x^2 + 3x - 7)\]

\[(5x - 2)(4x^2 + 3x - 7) = \square\]

(Do not factor. Simplify your answer.)

21. Find the quotient using long division.

\[
\frac{4x^2 - 3x + 1}{x - 2}\]

\[
\frac{4x^2 - 3x + 1}{x - 2} = \square \text{ (Simplify your answer.)}
\]

22. Divide. If the divisor contains 2 or more terms, use long division.

\[
\frac{y^3 + 5y^2 + 1}{y - 2}
\]

\[
\frac{y^3 + 5y^2 + 1}{y - 2} = \square
\]

23. Factor.

\[28a^2 + 49ab^2 + 28ab + 49b^3\]

\[28a^2 + 49ab^2 + 28ab + 49b^3 = \square \text{ (Factor completely.)}\]

24. Factor the four-term polynomial by grouping.

\[6x^2 - 12xy - 5x + 10y\]

Select the correct choice below and, if necessary, fill in the answer box within your choice.

\[\square A. \ 6x^2 - 12xy - 5x + 10y = \square\]
\[\square B. \ The \ polynomial \ is \ not \ factorable \ by \ grouping.\]
25. Factor the trinomial completely. If the trinomial contains a greatest common factor (other than 1), factor out the GCF first.

\[3x^3 - 21x^2 + 30x\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. \[3x^3 - 21x^2 + 30x = \square\] (Factor completely.)
- B. The polynomial is prime.

26. Factor the trinomial completely. If the trinomial contains a greatest common factor (other than 1), factor out the GCF first.

\[x^2 - 11xy - 12y^2\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. \[x^2 - 11xy - 12y^2 = \square\] (Factor completely.)
- B. The polynomial is prime.

27. Factor the trinomial completely.

\[2x^3y + 4x^2y^2 - 96xy^3\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. \[2x^3y + 4x^2y^2 - 96xy^3 = \square\] (Factor completely.)
- B. The polynomial is prime.
28. Factor the trinomial completely.

\[-6x^2 + 23x - 21\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

☐ A. \[-6x^2 + 23x - 21 = \square\] (Factor completely.)

☐ B. The polynomial is prime.

29. Factor the trinomial completely.

\[9x^2 - 42xy + 13y^2\]

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

☐ A. \[9x^2 - 42xy + 13y^2 = \square\]

☐ B. \[9x^2 - 42xy + 13y^2\] is prime.

30. Factor the following binomial completely.

\[49x^2 - 144y^2\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

☐ A. \[49x^2 - 144y^2 = \square\] (Factor completely.)

☐ B. The polynomial is prime.
31. Factor the following binomial completely.

\[ m^4 - 81 \]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- \( \bigcirc \) A. \( m^4 - 81 = \) (Factor completely.)
- \( \bigcirc \) B. The polynomial is prime.

32. Factor the binomial completely.

\[ 9 - \frac{1}{16}m^2 \]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- \( \bigcirc \) A. \( 9 - \frac{1}{16}m^2 = \) (Factor completely. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- \( \bigcirc \) B. The polynomial is prime.

33. Solve.

\[ x^2 - 15 = -2x \]

\[ x = \]

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

34. Solve the equation.

\[ x(2x - 9) = 11 \]

\[ x = \]

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)
35. Solve the equation.

\[(x - 2)(x + 5) = 8\]

\[x = \square\]

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

36. Simplify the expression.

\[\frac{1 - y^2}{y - 1}\]

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

\[\square\] A. \(\frac{1 - y^2}{y - 1}\) = \square (Simplify your answer.)

\[\square\] B. The expression cannot be simplified.

37. Find the product and simplify if possible.

\[\frac{x^2 - 25}{x^2 - 4x - 5} \cdot \frac{x + 1}{x}\]

\[\frac{x^2 - 25}{x^2 - 4x - 5} \cdot \frac{x + 1}{x} = \square (Simplify your answer.)\]

38. Find the quotient and simplify the result.

\[\frac{6x^6}{y^9} \div \frac{2x^6y^9}{9}\]

\[\frac{6x^6}{y^9} \div \frac{2x^6y^9}{9} = \square (Simplify your answer.)\]
39. Divide.

\[
\frac{x^2 - 4}{8x} \div \frac{2 - x}{4xy} = \square \quad \text{(Simplify your answer.)}
\]

40. Multiply.

\[
\frac{3x - 21}{2x^2 + x} \cdot \frac{2x^2 + 15x + 7}{x^2 - 49} = \square \quad \text{(Type your answer in factored form.)}
\]

41. Perform the indicated operation. Simplify if possible.

\[
\frac{7}{x + 6} - \frac{6x}{x^2 - 36} = \square \quad \text{(Simplify your answer.)}
\]

42. Perform the indicated operation.

\[
\frac{x}{x^2 - 9} - \frac{1}{x^2 - 6x + 9} = \square \quad \text{(Simplify your answer.)}
\]
43. Perform the indicated operation.
\[
\frac{9}{x^2 - 3x - 40} - \frac{2}{x + 5}
\]
\[
\frac{9}{x^2 - 3x - 40} - \frac{2}{x + 5} = \square \quad \text{(Simplify your answer.)}
\]

44. Solve the equation and check the proposed solution.
\[
\frac{6x}{x + 2} - 6 = \frac{x - 18}{x - 2}
\]
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. \( x = \square \)

{(Simplify your answer. Use a comma to separate answers as needed.)

○ B. There is no solution.

45. Solve the equation.
\[
\frac{2r - 2}{r^2 + 4r - 5} + \frac{4}{r + 5} = \frac{2}{r - 1}
\]
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. \( r = \square \)

(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

○ B. There is no solution.)
46. Solve the equation.
\[
\frac{x + 1}{x + 7} = \frac{x^2 - 51x}{x^2 + 5x - 14} - \frac{x - 7}{x - 2}
\]
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

☐ A. \(x = \square\)  
(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

☐ B. There is no solution.

47. Solve the equation for the indicated variable.
\[
I = \frac{4A}{T + B} \text{ for } T
\]

\(T = \square\) (Simplify your answer.)

48. Solve the equation for the indicated variable.
\[
\frac{1}{y} + \frac{1}{6} = \frac{1}{t} \text{ for } t
\]

\(t = \square\) (Simplify your answer.)

49. Simplify the complex fraction.
\[
\frac{x}{4} - \frac{1}{x} - \frac{2}{x}
\]

\[
\frac{x}{4} - \frac{1}{x} - \frac{2}{x} = \square\) (Use integers or fractions for any numbers in the expression.)
50. Simplify the complex fraction.

\[ \frac{\frac{3}{x} + 7}{\frac{9}{x^2} - 49} \]

\[ \frac{\frac{3}{x} + 7}{\frac{9}{x^2} - 49} = \square \]

51. Find the slope of the line that goes through the given points.

\((-5, 8) \text{ and } (1, 7)\)

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. The slope is \square. (Simplify your answer.)

○ B. The slope is undefined.

52. Find the slope of the line if it exists.

[Diagram of a line with points marked on a coordinate plane]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ A. The slope is \square.

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

○ B. The slope is undefined.
53. Find an equation of the line with the given slope that passes through the given point. Write the equation in the form $Ax + By = C$.

$$m = \frac{7}{4}, \ (8, -2)$$

Choose the equation of the line in the form $Ax + By = C$.

- [ ] A. $7x + 4y = 64$
- [ ] B. $7x + 4y = -64$
- [ ] C. $7x - 4y = 64$
- [ ] D. $4x - 7y = -64$

54. Find an equation of the line passing through the pair of points. Write the equation in the form $Ax + By = C$.

$( -2,7), \ (-3, -9)$

Choose the equation of the line in the form $Ax + By = C$.

- [ ] A. $16x + y = -39$
- [ ] B. $-16x - y = 39$
- [ ] C. $-16x + y = 39$
- [ ] D. $x + y = 39$
55. Graph the following inequality.

\[-4x + 4y > 8\]

Use the graphing tool to graph the inequality.

56. Graph the linear inequality \(6x - y \leq 4\).

Use the graphing tool to graph the inequality.
57. Graph the inequality.

\[ y < 10 \]

Use the graphing tool to graph the inequality.

58. Graph the inequality.

\[ x \geq -10 \]

Use the graphing tool to graph the inequality.
59. Solve the system of linear equations by graphing.
\[
\begin{align*}
2x - y &= 5 \\
y &= 5
\end{align*}
\]

Use the graphing tool to graph the system.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

☐ A. The solution of the system is \( \square \).
   (Type an ordered pair.)

☐ B. There are infinitely many solutions;
   \( \{(x,y) \mid 2x - y = 5\} \) or \( \{(x,y) \mid y = 5\} \).

☐ C. There is no solution; \( \emptyset \) or \( \square \).
60. Solve the system of linear equations by graphing.

\[
\begin{align*}
x &= -8 \\
y &= 3
\end{align*}
\]

Use the graphing tool to graph the system.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution of the system is \boxed{\text{}}. *(Type an ordered pair.)*
- **B.** There are infinitely many solutions; \((x,y)|x = -8\) or \((x,y)|y = 3\).
- **C.** There is no solution; \{\} or \(\emptyset\).

61. Solve the system by either the addition method or the substitution method.

\[
\begin{align*}
5y &= x + 25 \\
5x - 5y &= -25
\end{align*}
\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution is \boxed{\text{}}. *(Simplify your answer. Type an ordered pair.)*
- **B.** There are infinitely many solutions; \((x,y)|5y = x + 25\) or \((x,y)|5x - 5y = -25\).
- **C.** There is no solution; \{\} or \(\emptyset\).
62. Solve the system by either the addition method or the substitution method.

\[
\begin{align*}
    x + \frac{1}{15}y &= \frac{1}{3} \\
    4x + 2y &= 2
\end{align*}
\]

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** The solution is \[ \boxed{\text{}} \]. (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions; \{ (x, y) \mid x + \frac{1}{15}y = \frac{1}{3} \} or \{ (x, y) \mid 4x + 2y = 2 \}.
- **C.** There is no solution; {} or \( \varnothing \).

63. Simplify the radical. Assume that all variables represent positive real numbers.

\[
\sqrt[3]{-64x^{12}y^6}
\]

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** \( \sqrt[3]{-64x^{12}y^6} = \boxed{\text{}} \)
- **B.** The radical does not represent a real number.

64. Use the quotient rule to simplify. Assume that all variables represent positive real numbers.

\[
\frac{\sqrt{5x^2}}{\sqrt{4y^2}}
\]

\[
\frac{\sqrt{5x^2}}{\sqrt{4y^2}} = \boxed{\text{}}
\]

(Simplify your answer. Type an exact answer, using radicals as needed.)

65. Simplify. Assume that the variables represent nonnegative real numbers.

\[
\sqrt{100a^4b^5}
\]

\[
\sqrt{100a^4b^5} = \boxed{\text{}}
\] (Type an exact answer, using radicals as needed.)
66. Simplify. Assume that all variables represent positive real numbers.

\[- \sqrt{252x^6y^{15}}\]

\[- \sqrt{252x^6y^{15}} = \Box\]

(Type an exact answer, using radicals as needed.)

67. Add or subtract.

\[8\sqrt{75} - 2\sqrt{28} - 4\sqrt{27}\]

\[8\sqrt{75} - 2\sqrt{28} - 4\sqrt{27} = \Box\]

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

68. Add. Assume that all variables represent positive real numbers.

\[5y\sqrt{8y} + 7\sqrt{18y^3}\]

\[5y\sqrt{8y} + 7\sqrt{18y^3} = \Box\]

(Type an exact answer, using radicals as needed. Simplify your answer.)

69. Multiply. Assume that all variables represent positive real numbers.

\[(4\sqrt{x} - 7)(3\sqrt{x} - 7)\]

\[(4\sqrt{x} - 7)(3\sqrt{x} - 7) = \Box\]

(Simplify your answer. Type an exact answer, using radicals as needed.)

70. Multiply.

\[(8\sqrt{3} + 4\sqrt{2})(\sqrt{3} - \sqrt{2})\]

\[(8\sqrt{3} + 4\sqrt{2})(\sqrt{3} - \sqrt{2}) = \Box\]

(Type an exact answer, using radicals as needed. Simplify your answer.)
71. Rationalize the denominator. Assume that all variables represent positive real numbers.

\[ \frac{8}{\sqrt{45x}} \]

\[ \frac{8}{\sqrt{45x}} = \_ \] (Type an exact answer, using radicals as needed.)

72. Rationalize the denominator.

\[ \frac{8}{3 - \sqrt{11}} \]

\[ \frac{8}{3 - \sqrt{11}} = \_ \]

(Simplify your answer. Type an exact answer, using radicals as needed.)

73. Rationalize the numerator of \( \frac{\sqrt{x} + 2}{\sqrt{x} - 2} \). Assume that all variables represent positive real numbers.

\[ \frac{\sqrt{x} + 2}{\sqrt{x} - 2} = \_ \]

74. Solve.

\[ \sqrt{2x - 5} - 2 = 1 \]

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

- A. \( x = \_ \)
  (Simplify your answer. Use a comma to separate answers as needed.)
- B. There is no solution.
<table>
<thead>
<tr>
<th>Question</th>
<th>Math Expression</th>
<th>Instructions</th>
</tr>
</thead>
</table>
| 75.      | \(-\sqrt{4x} + 1 = -9\) | Select the correct choice below and fill in any answer boxes present in your choice.  
|          |                 | O A. \(x = \square\)  
|          |                 | (Simplify your answer. Use a comma to separate answers as needed.)  
|          |                 | O B. There is no solution. |
| 76.      | \(\sqrt{29 - x} = x + 1\) | Select the correct choice below and, if necessary, fill in the answer box to complete your choice.  
|          |                 | O A. \(x = \square\)  
|          |                 | (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)  
|          |                 | O B. There is no real solution. |
| 77.      | Use the square root property to solve the equation. The equation has real number solutions.  
|          | \((x - 9)^2 = 80\) | \(x = \square\)  
|          |                 | (Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.) |
| 78.      | Use the quadratic formula to solve the equation.  
|          | \(8m^2 - 2m = 11\) | \(m = \square\)  
|          |                 | (Type an exact answer, using radicals and \(i\) as needed. Use a comma to separate answers as needed.) |
79. Use the quadratic formula to solve the equation.

\[ \frac{1}{3}y^2 - y + \frac{1}{12} = 0 \]

\[ y = \square \]

(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

80. A 14-foot piece of string is cut into two pieces so that the longer piece is 2 feet longer than twice the shorter piece. If the shorter piece is \( x \) feet long, find the lengths of both pieces.

The shorter piece is \( \square \) feet long.

The longer piece is \( \square \) feet long.

81. A flower bed is in the shape of a triangle with one side twice the length of the shortest side, and the third side is 12 feet more than the length of the shortest side. Find the dimensions if the perimeter is 148 feet.

\[ a = \square \text{ ft} \quad \text{(shortest side)} \]
\[ b = \square \text{ ft} \quad \text{(second side)} \]
\[ c = \square \text{ ft} \quad \text{(third side)} \]

82. A train leaves Little Rock, Arkansas, and travels north at 65 kilometers per hour. Another train leaves at the same time and travels south at 65 kilometers per hour. How long will it take before they are 390 kilometers apart?

It will take \( \square \) hours.

83. An object is thrown upward from the top of an 80-foot building with an initial velocity of 64 feet per second. The height \( h \) of the object after \( t \) seconds is given by the quadratic equation \( h = -16t^2 + 64t + 80 \). When will the object hit the ground?

The object will hit the ground at when the time is \( \square \) seconds.
84. The length of a rectangle is 13 centimeters less than six times its width. Its area is 15 square centimeters. Find the dimensions of the rectangle.

The width is cm.

The length is cm.

85. Eight times the reciprocal of a number equals 4 times the reciprocal of 10. Find the number.

The number is .

86. Suppose that during a test drive of two cars, one car travels 160 miles in the same time that the second car travels 125 miles. If the speed of one car is 14 miles per hour faster than the speed of the second car, find the speed of both cars.

The speed of the first car is mph, and the speed of the second car is mph.

87. Jen Butler has been pricing Speed-Pass train fares for a group trip to New York. Three adults and four children must pay $88. Two adults and three children must pay $62. Find the price of the adult's ticket and the price of a child's ticket.

The price of a child's ticket is $.

The price of an adult's ticket is $.

88. Kevin and Randy Muise have a jar containing 64 coins, all of which are either quarters or nickels. The total value of the coins in the jar is $11.60. How many of each type of coin do they have?

The jar contains quarters.

The jar contains nickels.
89. Doreen Schmidt is a chemist. She needs to prepare 28 ounces of a 13% hydrochloric acid solution. Find the amount of 14% solution and the amount of 7% solution she should mix to get this solution.

How many ounces of the 14% acid solution should be in the mixture?

☐ ounces

How many ounces of the 7% acid solution should be in the mixture?

☐ ounces

90. What are the length and width of a rectangular traffic sign if the length exceeds the width by 16 inches and the perimeter is 168 inches?

The length is ☐ inches.
(Type an integer or a decimal.)

The width is ☐ inches.
(Type an integer or a decimal.)
1. A, − 29

2. A, 4

3. A, 14

4. A, − 17

5. 1

6. \( \frac{q - r}{rt} \)

7. \( \frac{S - 7πc^2}{6πc} \)

8. D
   \((-∞, − 2]\)

9. D
   \(\left( \frac{10}{9}, ∞ \right)\)

10. 1

11. \( \frac{5}{16} \)

12. \( \frac{u^{15}}{27v^6} \)

13. \( \frac{16a^6}{b^5} \)
14. $a^6 b^8$

15. $\frac{4b^{13}}{a^6}$

16. $8x^2 + 3x + 3$

17. $36x^2 + 24x + 4$

18. $9x^2 - 42xy + 49y^2$

19. $x^3 - 6x^2 + 14x - 12$

20. $20x^3 + 7x^2 - 41x + 14$

21. $4x + 5 + \frac{11}{x - 2}$

22. $y^2 + 7y + 14 + \frac{29}{y - 2}$

23. $7(4a + 7b^2)(a + b)$


25. $A, 3x(x - 5)(x - 2)$

26. $A, (x - 12y)(x + y)$
27. \( A, \quad 2xy(x - 6y)(x + 8y) \)

28. \( A, \quad -1(3x - 7)(2x - 3) \)

29. \( A, \quad (3x - 13y)(3x - y) \)

30. \( A, \quad (7x + 12y)(7x - 12y) \)

31. \( A, \quad (m^2 + 9)(m + 3)(m - 3) \)

32. \( A, \quad \left(3 + \frac{1}{4}m\right)\left(3 - \frac{1}{4}m\right) \)

33. \( -5,3 \)

34. \( -1, \quad \frac{11}{2} \)

35. \( 3, -6 \)

36. \( A, \quad -y - 1 \)

37. \( \frac{x + 5}{x} \)

38. \( \frac{27}{y^{18}} \)

39. \( \frac{y(x + 2)}{2} \)
40. \( \frac{3}{x} \)

41. \( \frac{x - 42}{(x + 6)(x - 6)} \)

42. \( \frac{x^2 - 4x - 3}{(x - 3)^2(x + 3)} \)

43. \( \frac{-2x + 25}{(x + 5)(x - 8)} \)

44. A, 10, -6

45. A, 4

46. A, -51, 1

47. \( \frac{4A - BI}{I} \)

48. \( \frac{6y}{6 + y} \)

49. \( \frac{x + 2}{4} \)

50. \( \frac{x}{3 - 7x} \)

51. A, \( -\frac{1}{6} \)

52. A, \( -\frac{10}{3} \)
53. C

54. C

55.

56.
57.

58.

59.

\[ A, (5,5) \]
60. \( A, (-8,3) \)

61. \( A, (0,5) \)

62. \( A, \left( \frac{4}{13}, \frac{5}{13} \right) \)

63. \( A, -4x^4y^2 \)

64. \( \frac{x\sqrt{5}}{2y} \)

65. \( 10a^2b^2\sqrt{b} \)

66. \( -6x^3y^7\sqrt{7y} \)

67. \( 28\sqrt{3} - 4\sqrt{7} \)

68. \( 31y\sqrt{2y} \)

69. \( 12x - 49\sqrt{x} + 49 \)
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.</td>
<td>(-4\sqrt{6} + 16)</td>
</tr>
<tr>
<td>71.</td>
<td>(\frac{8\sqrt{5}x}{15x})</td>
</tr>
<tr>
<td>72.</td>
<td>(-4(3 + \sqrt{11}))</td>
</tr>
<tr>
<td>73.</td>
<td>(\frac{x - 4}{x - 4\sqrt{x} + 4})</td>
</tr>
<tr>
<td>74.</td>
<td>A, 7</td>
</tr>
<tr>
<td>75.</td>
<td>A, 25</td>
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<tr>
<td>76.</td>
<td>A, 4</td>
</tr>
<tr>
<td>77.</td>
<td>(9 + 4\sqrt{5}, 9 - 4\sqrt{5})</td>
</tr>
<tr>
<td>78.</td>
<td>(\frac{1 - \sqrt{89}}{8}, \frac{1 + \sqrt{89}}{8})</td>
</tr>
<tr>
<td>79.</td>
<td>(\frac{3 - \sqrt{10}}{2}, \frac{3 + \sqrt{10}}{2})</td>
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<tr>
<td>80.</td>
<td>4 10</td>
</tr>
<tr>
<td>81.</td>
<td>34 68 46</td>
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<td>82.</td>
<td>3</td>
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<tr>
<td>83.</td>
<td>5</td>
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<tr>
<td>84.</td>
<td>3 5</td>
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<td>88.</td>
<td>42 22</td>
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<tr>
<td>89.</td>
<td>24 4</td>
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<td>90.</td>
<td>50 34</td>
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