Student: _____
Date: _____

Instructor: Alfredo Alvarez
Course: Algebra Foundations, Martin-Gay, Elayn

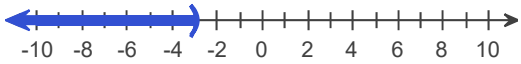
Assignment: m032099pract

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

$5x - 3 \le 7x - 3x$

Choose the graph of the solution set.

A. 

B. 

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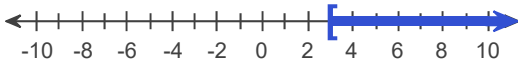
D. 

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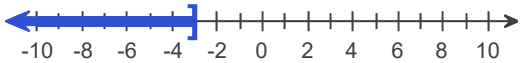
F. 

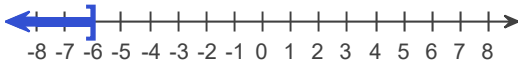
The solution to the inequality $5x - 3 \le 7x - 3x$ is _____.
(Type your answer in interval notation.)

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

$2x < -12$

Choose the correct graph below.

A. 

B. 

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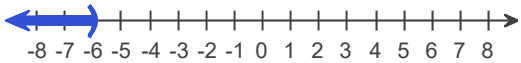
D. 

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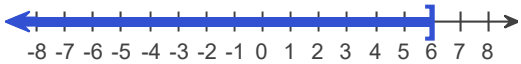
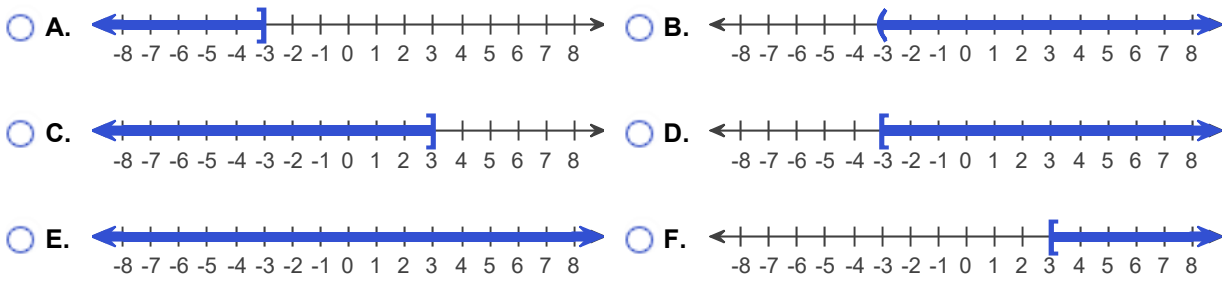
F. 

The solution to the inequality $2x < -12$ is _____.
(Type your answer in interval notation.)

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

$-6x \leq 18$

Choose the correct graph below.



The solution to the inequality $-6x \leq 18$ is _____.
(Type your answer in interval notation.)

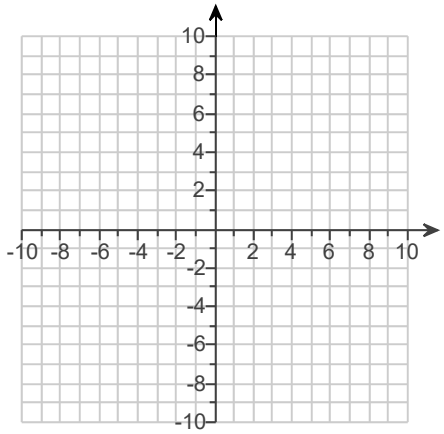
4. For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y = -2x + 5$

Find three ordered pair solutions of the given equation.

x	y
0	
1	
2	

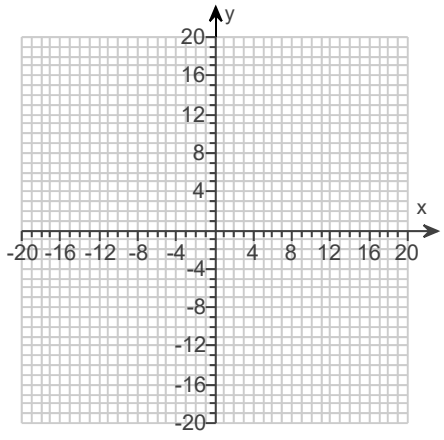
Use the graphing tool to graph the line.



5. Graph the equation.

$y = 3x + 3$

Use the graphing tool to graph the line.



6. Find the value of $x^2 - 5x + 3$ for the given value of x.

$x = -3$

The value of the polynomial for $x = -3$ is _____. (Simplify your answer.)

7. Given the function $f(x) = |x + 8|$, find each of the following.

f(6), f(− 5), f(0)

f(6) = _____
(Simplify your answer. Type an integer or a fraction.)

f(− 5) = _____
(Simplify your answer. Type an integer or a fraction.)

f(0) = _____
(Simplify your answer. Type an integer or a fraction.)

8. Find h(− 1), h(0), and h(4) for the following function.

$h(x) = 4x^2 + 2$

h(− 1) = _____ (Simplify your answer.)

h(0) = _____ (Simplify your answer.)

h(4) = _____ (Simplify your answer.)

9. If $P(x) = x^2 + x + 5$, find P(7).

P(7) = _____

10. An object is dropped from the top of a tower with a height of 1210 feet. Neglecting air resistance, the height of the object at time t seconds is given by the polynomial $-16t^2 + 1210$. Find the height of the object at t = 1 second.

The height of the object at 1 second is _____ feet.

11. Multiply.

(a + 4)(a − 2)

(a + 4)(a − 2) = _____

12. Multiply.

(3x − 5)(5x + 7)

(3x − 5)(5x + 7) = _____ (Simplify your answer.)

13. Multiply vertically.

(7x − 13)(4x + 1)

(7x − 13)(4x + 1) = _____

14. Multiply vertically.

$(7x + 1)(2x^2 + 5x - 1)$

$(7x + 1)(2x^2 + 5x - 1) =$ _____ (Simplify your answer.)

15. Multiply.

$(z + 17)(3z + 1)$

$(z + 17)(3z + 1) =$ _____ (Simplify your answer.)

16. Multiply.

$(a + 5)\left(a^2 - 8a + 8\right)$

$(a + 5)\left(a^2 - 8a + 8\right) =$ _____

17. Multiply.

$(6x - 7)^2$

$(6x - 7)^2 =$ _____ (Simplify your answer.)

18. Multiply.

$(a - 5)(a + 5)$

$(a - 5)(a + 5) =$ _____ (Simplify your answer.)

19. Find the quotient using long division.

$$\frac{5x^2 - 4x + 5}{x - 2}$$

$\frac{5x^2 - 4x + 5}{x - 2} =$ _____ (Simplify your answer.)

20. Factor out the greatest common factor from the polynomial.

$9x + 27$

$9x + 27 =$ _____ (Type your answer in factored form.)

21. Factor out the GCF from the polynomial.

$z(y + 7) - 7(y + 7)$

$z(y + 7) - 7(y + 7) =$ _____

22. Factor.

$16xy - 18x^2$

$16xy - 18x^2 =$ _____ (Factor completely.)

23. Factor the following polynomial.

$-48x^4y^4 - 40x^6y^3$

$-48x^4y^4 - 40x^6y^3 =$ _____ (Factor completely.)

24. Factor the trinomial completely.

$x^2 + 3x + 2$

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

- **A.** $x^2 + 3x + 2 =$ _____
- **B.** The polynomial is prime.

25. Factor the trinomial completely.

$x^2 - 11x + 18$

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

- **A.** $x^2 - 11x + 18 =$ _____ (Type your answer in factored form.)
- **B.** The polynomial is prime.

26. Factor the trinomial completely. If the polynomial cannot be factored, say it is prime.

$x^2 - 14x + 49$

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

- **A.** $x^2 - 14x + 49 =$ _____ (Type your answer in factored form.)
- **B.** The polynomial is prime.

27. Factor the trinomial completely.

$x^2 - 2x - 63$

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

- **A.** $x^2 - 2x - 63 =$ _____ (Type your answer in factored form.)
- **B.** The polynomial is prime.

28. Factor the trinomial completely.

$x^2 + 2x - 24$

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

- **A.** $x^2 + 2x - 24 =$ _____
- **B.** The polynomial is prime.

29. Factor the trinomial completely.

$a^2 - 10ab + 16b^2$

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

- **A.** $a^2 - 10ab + 16b^2 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

30. Factor the trinomial completely.

$2x^2 + 18x + 28$

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

- **A.** $2x^2 + 18x + 28 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

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

$4x^3 - 24x^2 + 32x$

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

- **A.** $4x^3 - 24x^2 + 32x =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

32. Factor the trinomial completely. Don't forget to factor out the GCF first.

$r^2 - 17r + 52$

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

- **A.** $r^2 - 17r + 52 =$ _____
- **B.** The polynomial is prime.

33. Factor the trinomial completely.

$2x^2 + 30x - 32$

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

- **A.** $2x^2 + 30x - 32 =$ _____
- **B.** The polynomial is prime.

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

$x^2 - 3x - 4$

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

- **A.** $x^2 - 3x - 4 =$ _____ (Factor completely.)
- **B.** $x^2 - 3x - 4$ is prime.

35. Factor completely.

$5x^2 + 34x + 24$

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

- **A.** $5x^2 + 34x + 24 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

36. Factor the trinomial completely.

$26y^2 - 51y + 25$

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

- **A.** $26y^2 - 51y + 25 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

37. Factor the trinomial completely.

$2x^2 - 5x - 3$

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

- **A.** $2x^2 - 5x - 3 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

38. Factor the following binomial completely.

$x^2 - 144$

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

- **A.** $x^2 - 144 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

39. Factor the given binomial completely.

$25x^2 - 144$

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

- **A.** $25x^2 - 144 =$ _____
- **B.** The polynomial is prime.

40. Factor the following binomial completely.

$196x^2 - 169y^2$

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

- **A.** $196x^2 - 169y^2 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

41. Factor the binomial completely.

$x^2 - \frac{1}{169}$

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

- **A.** $x^2 - \frac{1}{169} =$ _____ (Factor completely. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** The polynomial is prime.

42. Factor the binomial completely.

$x^2 - 169y^2$

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

- **A.** $x^2 - 169y^2 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

43. Factor the binomial completely.

$75r^2 - 27$

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

- **A.** $75r^2 - 27 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

44. Factor the binomial completely.

$36xy^2 - 25x$

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

- **A.** $36xy^2 - 25x =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

45. Factor the binomial completely.

$xy^3 - 81xyz^2$

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

- **A.** $xy^3 - 81xyz^2 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

46. Solve the equation.

$(x - 2)(x + 9) = 0$

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

47. Solve the equation.

$7x(x - 5) = 0$

x = _____ (Use a comma to separate answers as needed.)

48. Solve the equation.

$(2x - 5)(8x + 7) = 0$

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

49. Solve the equation.

$x^2 - 12x + 35 = 0$

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

50. Solve.

$x^2 + 2x - 15 = 0$

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

51. Solve the equation.

$x^2 - 3x = 28$

x = _____
(Use a comma to separate answers as needed.)

52. Solve the equation.

$36x^2 - 1 = 0$

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

53. Solve.

$5x^2 - 3x - 2 = 0$

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

54. Simplify the expression.

$$\frac{5}{25a - 40}$$

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

- **A.** $\frac{5}{25a - 40}$ = _____ (Simplify your answer.)
- **B.** The expression cannot be simplified.

55. Simplify the expression.

$$\frac{-6m - 6n}{m + n}$$

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

- **A.** $\frac{-6m - 6n}{m + n}$ = _____ (Simplify your answer.)
- **B.** The expression cannot be simplified.

56. Simplify the expression.

$$\frac{3x+9}{x^2+3x}$$

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

- **A.** $\frac{3x+9}{x^2+3x} =$ _____ (Simplify your answer.)
- **B.** The expression cannot be simplified.

57. Simplify the expression.

$$\frac{x+7}{x^2-3x-70}$$

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

- **A.** $\frac{x+7}{x^2-3x-70} =$ _____ (Simplify your answer.)
- **B.** The expression cannot be simplified.

58. Find the function value.

If $f(x) = \frac{x+12}{2x-1}$, find f(4), f(0), and f(− 5).

f(4) = _____ (Type an integer or a simplified fraction.)

f(0) = _____ (Type an integer or a simplified fraction.)

f(− 5) = _____ (Type an integer or a simplified fraction.)

59. Find the product and simplify if possible.

$$\frac{8x}{y^2} \cdot \frac{4y}{7x}$$

$\frac{8x}{y^2} \cdot \frac{4y}{7x} =$ _____ (Simplify your answer. Use positive exponents only.)

60. Find the product and simplify if possible.

$$\frac{x}{2x-4} \cdot \frac{x^2-2x}{5}$$

$\frac{x}{2x-4} \cdot \frac{x^2-2x}{5} =$ _____

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

61. Find the quotient and simplify the result.

$$\frac{12x^4}{y^6} \div \frac{2x^4y^6}{5}$$

$\frac{12x^4}{y^6} \div \frac{2x^4y^6}{5} =$ _____ (Simplify your answer.)

62. Subtract the rational expressions and simplify if possible.

$$\frac{15x}{5x-6} - \frac{18}{5x-6}$$

$\frac{15x}{5x-6} - \frac{18}{5x-6} =$ _____ (Simplify your answer.)

63. Perform the indicated operation. Simplify if possible.

$$\frac{a^2}{a-9} - \frac{22a-117}{a-9}$$

The difference is _____.

64. Solve the equation.

$$\frac{2}{y} + \frac{1}{3} = \frac{3}{3y}$$

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

- **A.** $y =$ _____ (Use a comma to separate answers if needed.)
- **B.** There is no solution.

65. Solve the compound inequality.

$$-6 \le 5x - 6 \le 14$$

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

- **A.** The solution set is _____.
  (Type your answer in interval notation. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** The solution set is $\varnothing$.

66. Solve the absolute value equation.

$|2x - 5| = 17$

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

- **A.** The solution set is $\{\quad\}$.
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- **B.** The solution set is $\varnothing$.

67. Solve the inequality. Then graph the solution set.

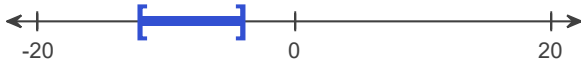
$|x + 8| < 4$

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

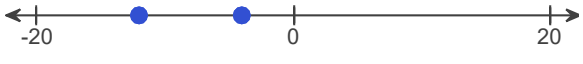
- **A.** The solution is one or more intervals. The solution is _____.
  (Simplify your answer. Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
- **B.** There are only one or two solutions. The solution set is $\{\quad\}$.
  (Type an integer or a fraction. Use a comma to separate answers as needed.)
- **C.** There is no solution.

Choose the correct graph below.

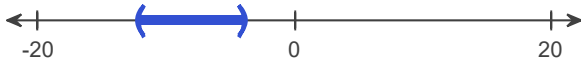
A.



B.



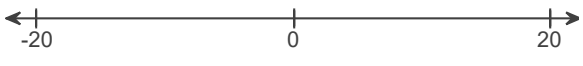
C.



D.

E.

F.



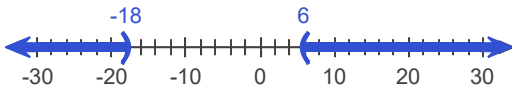
68. Solve the inequality. Graph the solution set.

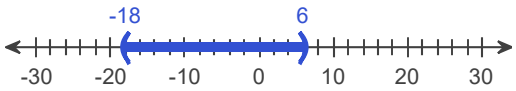
$|x + 6| \geq 12$

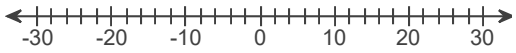
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

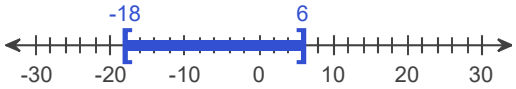
- **A.** The solution is one or more intervals. The solution is _____.
  (Type your answer in interval notation. Simplify your answer. Use integers or fractions for any numbers in the expression.)
- **B.** There are only one or two solutions. The solution set is {_____}.
  (Use a comma to separate answers as needed.)
- **C.** There is no solution.

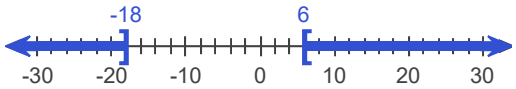
Choose the correct graph below.

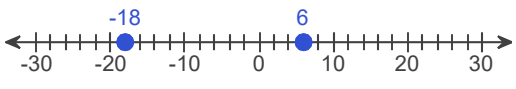
- **A.** 

- **B.** 

- **C.** 

- **D.** 

- **E.** 

- **F.** 

69. Find the cube root.

$\sqrt[3]{-64x^{18}}$

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

- **A.** $\sqrt[3]{-64x^{18}}$ = _____ (Simplify your answer.)
- **B.** The root is not a real number.

70. Find the root. Assume that the variable represents a nonnegative real number.

$\sqrt{16x^{18}}$

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

- **A.** $\sqrt{16x^{18}}$ = _____ (Simplify your answer.)
- **B.** The root is not a real number.

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

$\sqrt{25a^2b^{16}}$

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

- **A.** $\sqrt{25a^2b^{16}}$ = _____
- **B.** The square root is not a real number.

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

$\sqrt[3]{-27x^{12}y^9}$

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

- **A.** $\sqrt[3]{-27x^{12}y^9}$ = _____
- **B.** The radical does not represent a real number.

73. If $f(x) = \sqrt{5x+6}$, find f(3).

f(3) = _____ (Type an exact answer, using radicals as needed.)

74. Use radical notation to write the expression. Simplify, if possible.

$125^{1/3}$

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

- **A.** $125^{1/3}$ = _____ (Simplify your answer. Type an exact answer, using radicals as needed.)
- **B.** The answer is not a real number.

75. Use radical notation to rewrite the expression. Simplify if possible.

$81^{5/4}$

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

- **A.** $81^{5/4}$ = _____
(Simplify your answer. Type an exact answer, using radicals as needed.)
- **B.** The answer is not a real number.

76. Write with positive exponents. Simplify if possible.

$1000^{-\frac{5}{3}}$

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

- **A.** $1000^{-\frac{5}{3}}$ = _____ (Simplify your answer.)
- **B.** The answer is not a real number.

77. Basal metabolic rate (BMR) is the number of calories per day a person needs to maintain life. A person's basal metabolic rate B(w) in calories per day can be estimated with the function $B(w) = 70w^{\frac{3}{4}}$, where w is the person's weight in kilograms.

Estimate the BMR for a person who weighs 67 kilograms. (Note: 67 kilograms is approximately 148 pounds.)

B(w) = _____ calories (Round to the nearest calorie as needed.)

78. Simplify by factoring.

$\sqrt{50}$

$\sqrt{50}$ = _____
(Type an exact answer, using radicals as needed.)

79. Express in simplified form.

$\sqrt[3]{24}$

$\sqrt[3]{24}$ = _____ • $\sqrt[3]{}$

80. Find the distance between the pair of points.

(4,4) and (7,8)

The exact distance is _____ units. (Simplify your answer.)

81. Find the midpoint of the line segment whose endpoints are given.

(3, − 19) and (3,7)

The midpoint of the line segment is _____. (Type an ordered pair.)

82. Solve.

$\sqrt{x - 13} = 3$

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

- **A.** The solution(s) is(are) x = _____.
  (Use a comma to separate answers as needed.)
- **B.** The solution set is ∅.

83. Solve.

$\sqrt{27 - x} = x + 3$

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

- **A.** x = _____
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- **B.** There is no real solution.

84. Add.

$(5 - 8i) + (5 + 7i)$

$(5 - 8i) + (5 + 7i)$ = _____
(Simplify your answer. Type your answer in the form a + bi.)

85. Subtract.

$(6 + 4i) - (9 - 5i)$

$(6 + 4i) - (9 - 5i) =$ _____
(Simplify your answer. Type your answer in the form a + bi.)

86. Multiply.

$(2 - 5i)^2$

$(2 - 5i)^2 =$ _____
(Simplify your answer. Type your answer in the form a + bi.)

87. Write the quotient in the form a + bi.

$$\frac{9 + 5i}{1 + i}$$

$\frac{9 + 5i}{1 + i} =$ _____
(Simplify your answer. Type your answer in the form a + bi. Use integers or fractions for any numbers in the expression.)

88. Use the square root property to solve the equation. The equation has real number solutions.

$x^2 = 225$

x = _____
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

89. Use the square root property to solve the equation. The equation has real number solutions.

$(x + 9)^2 = 16$

x = _____
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

90. Use the square root property to solve the equation.

$x^2 + 36 = 0$

x = _____
(Type an exact answer, using radicals as needed. Express complex numbers in terms of i. Use a comma to separate answers as needed.)

91. Solve the equation by completing the square.

$x^2 + 8x + 9 = 0$

x = _____
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

92. Use the formula $A = P(1 + r)^t$ to solve the following problem.

Find the rate r at which \$200,000 grows to \$237,620 in 2 years.

The annual compound interest rate is _____%.
(Round to the nearest percent.)

93. Use the quadratic formula to solve the equation.

$m^2 - m - 2 = 0$

m = _____
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

94. Use the quadratic formula to solve the equation. The equation has real number solutions.

$4y = 3y^2 + 1$

y = _____
(Type a simplified answer, using fractions and radicals as needed. Use a comma to separate answers as needed.)

95. Use the quadratic formula to solve the equation.

$x^2 - 4x + 4 = 0$

x = _____
(Simplify your answer. Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

96. Use the quadratic formula to solve the equation.

$x^2 + 7x - 2 = 0$

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

97. Use the quadratic formula to solve the equation.

$9m^2 + 2m = 6$

m = _____
(Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

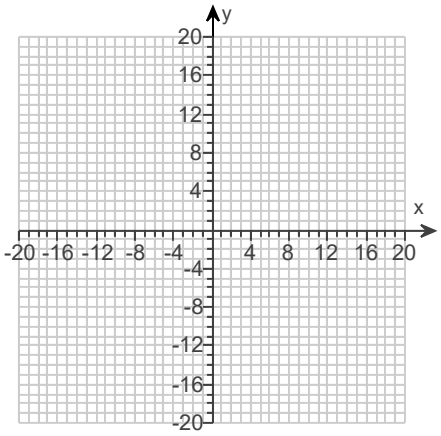
98. Use the quadratic formula to solve the equation.

$x^2 + 6x + 18 = 0$

The solution(s) is/are x = _____.
(Simplify your answer. Type an exact answer, using radicals and i as needed. Use a comma to separate answers as needed.)

99. Sketch the graph of the quadratic function and the axis of symmetry. State the vertex, and give the equation for the axis of symmetry.

$f(x) = x^2 - 10$



Use the graphing tool to graph the function as a solid curve and the axis of symmetry as a dashed line.

The vertex is _____.
(Type an ordered pair.)

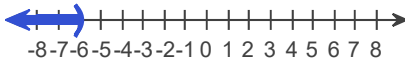
The axis of symmetry is _____.
(Type an equation.)

1.

E.

$(-\infty, 3]$

2.



D.

$(-\infty, -6)$

3.

D.

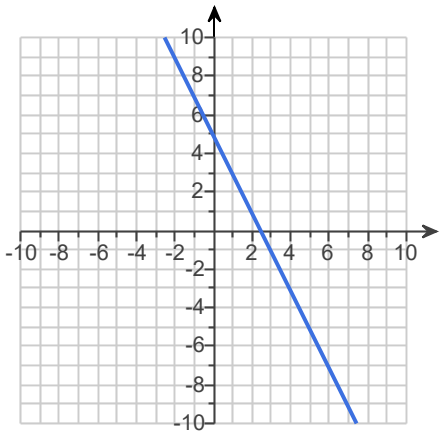
$[-3, \infty)$

---

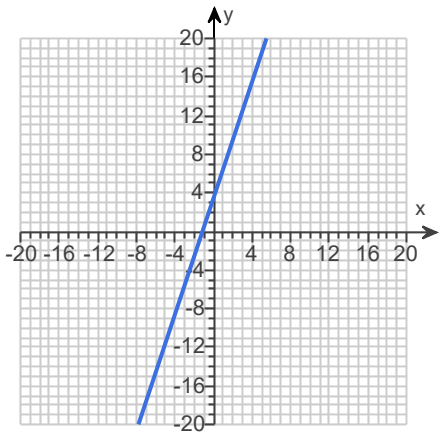
4. 5

3

1



5.



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6. 27

---

7. 14

3

8

---

8. 6

2

66

---

9. 61

---

10. 1194

---

11. $a^2 + 2a - 8$

---

12. $15x^2 - 4x - 35$

---

13. $28x^2 - 45x - 13$

---

14. $14x^3 + 37x^2 - 2x - 1$

---

15. $3z^2 + 52z + 17$

---

16. $a^3 - 3a^2 - 32a + 40$

---

17. $36x^2 - 84x + 49$

---

18. $a^2 - 25$

---

19. $5x + 6 + \frac{17}{x - 2}$

---

20. $9(x + 3)$

---

21. $(y + 7)(z - 7)$

---

22. $2x(8y - 9x)$

23. $8x^4y^3\left(-6y - 5x^2\right)$

24. A. $x^2 + 3x + 2 =$ **$(x + 2)(x + 1)$**

25. A. $x^2 - 11x + 18 =$ **$(x - 9)(x - 2)$** (Type your answer in factored form.)

26. A. $x^2 - 14x + 49 =$ **$(x - 7)(x - 7)$** (Type your answer in factored form.)

27. A. $x^2 - 2x - 63 =$ **$(x + 7)(x - 9)$** (Type your answer in factored form.)

28. A. $x^2 + 2x - 24 =$ **$(x + 6)(x - 4)$**

29. A. $a^2 - 10ab + 16b^2 =$ **$(a - 8b)(a - 2b)$** (Factor completely.)

30. A. $2x^2 + 18x + 28 =$ **$2(x + 7)(x + 2)$** (Factor completely.)

31. A. $4x^3 - 24x^2 + 32x =$ **$4x(x - 4)(x - 2)$** (Factor completely.)

32. A. $r^2 - 17r + 52 =$ **$(r - 13)(r - 4)$**

33. A. $2x^2 + 30x - 32 =$ **$2(x + 16)(x - 1)$**

34. A. $x^2 - 3x - 4 =$ **$(x - 4)(x + 1)$** (Factor completely.)

35. A. $5x^2 + 34x + 24 =$ **$(5x + 4)(x + 6)$** (Factor completely.)

36. A. $26y^2 - 51y + 25 =$ **$(26y - 25)(y - 1)$** (Factor completely.)

37. A. $2x^2 - 5x - 3 =$ **$(2x + 1)(x - 3)$** (Factor completely.)

38. A. $x^2 - 144 =$ **$(x + 12)(x - 12)$** (Factor completely.)

39. A. $25x^2 - 144 =$ **$(5x + 12)(5x - 12)$**

40. A. $196x^2 - 169y^2 =$ **$(14x + 13y)(14x - 13y)$** (Factor completely.)

41. A. $x^2 - \frac{1}{169} =$ **$\left(x + \frac{1}{13}\right)\left(x - \frac{1}{13}\right)$** (Factor completely. Simplify your answer. Use integers or fractions for any numbers in the expression.)

42. A. $x^2 - 169y^2 =$ **$(x - 13y)(x + 13y)$** (Factor completely.)

43. A. $75r^2 - 27 =$ **$3(5r + 3)(5r - 3)$** (Factor completely.)

44. A. $36xy^2 - 25x =$ **$x(6y + 5)(6y - 5)$** (Factor completely.)

45. A. $xy^3 - 81xyz^2 =$ **$xy(y + 9z)(y - 9z)$** (Factor completely.)

46. $2, -9$

47. $5,0$

48. $\frac{5}{2}, -\frac{7}{8}$

49. $7,5$

50. $-5,3$

51. $7, -4$

52. $\frac{1}{6}, -\frac{1}{6}$

53. $-\frac{2}{5}, 1$

---

54. A. $\frac{5}{25a-40} =$ $\frac{\mathbf{1}}{\mathbf{5a-8}}$ (Simplify your answer.)

---

55. A. $\frac{-6m-6n}{m+n} =$ **−6** (Simplify your answer.)

---

56. A. $\frac{3x+9}{x^2+3x} =$ $\frac{\mathbf{3}}{\mathbf{x}}$ (Simplify your answer.)

---

57. A. $\frac{x+7}{x^2-3x-70} =$ $\frac{\mathbf{1}}{\mathbf{x-10}}$ (Simplify your answer.)

---

58. $\frac{16}{7}$

-12

$-\frac{7}{11}$

---

59. $\frac{32}{7y}$

---

60. $\frac{x^2}{10}$

---

61. $\frac{30}{y^{12}}$

---

62. 3

---

63. $a-13$

---

64. A. y = **−3** (Use a comma to separate answers if needed.)

---

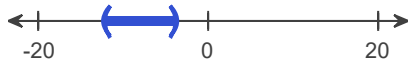
65. A. The solution set is **[0,4]** .
(Type your answer in interval notation. Simplify your answer. Use integers or fractions for any numbers in the expression.)

---

66. A. The solution set is $\{$ **11, − 6** $\}$.
(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

---

67. A. The solution is one or more intervals. The solution is **(− 12, − 4)** .
(Simplify your answer. Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)

C. 

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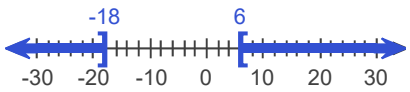
68. A. The solution is one or more intervals. The solution is **(− ∞, − 18] ∪ [6,∞)** .
(Type your answer in interval notation. Simplify your answer. Use integers or fractions for any numbers in the expression.)

E. 

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69. A. $\sqrt[3]{-64x^{18}}$ = **$-4x^6$** (Simplify your answer.)

---

70. A. $\sqrt{16x^{18}}$ = **$4x^9$** (Simplify your answer.)

---

71. A. $\sqrt{25a^2b^{16}}$ = **$5ab^8$**

---

72. A. $\sqrt[3]{-27x^{12}y^9}$ = **$-3x^4y^3$**

---

73. $\sqrt{21}$

---

74. A. $125^{1/3}$ = **5** (Simplify your answer. Type an exact answer, using radicals as needed.)

---

75. A. $81^{5/4}$ = **243** (Simplify your answer. Type an exact answer, using radicals as needed.)

---

76. A. $1000^{-\frac{5}{3}}$ = $\frac{\mathbf{1}}{\mathbf{100000}}$ (Simplify your answer.)

---

77. 1639

---

78. $5\sqrt{2}$

---

79. 2

3

80. 5

81. (3, − 6)

82. A. The solution(s) is(are) x = **22** . (Use a comma to separate answers as needed.)

83. A. x = **2** (Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

84. $10 - i$

85. $-3 + 9i$

86. $-21 - 20i$

87. $7 - 2i$

88. 15, − 15

89. − 5, − 13

90. $6i, -6i$

91. $-4 + \sqrt{7}, -4 - \sqrt{7}$

92. 9

93. − 1,2

94. $1, \frac{1}{3}$

95. 2

96. $\frac{-7-\sqrt{57}}{2}, \frac{-7+\sqrt{57}}{2}$

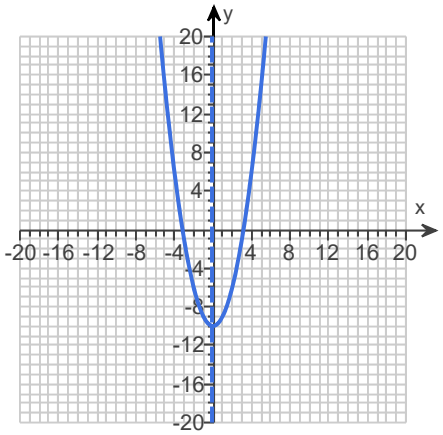
---

97. $\frac{-1-\sqrt{55}}{9}, \frac{-1+\sqrt{55}}{9}$

---

98. $-3+3i, -3-3i$

99.



$(0, -10)$

$x = 0$
