Student: _____ **Instructor:** Alfredo Alvarez **Assignment:** Math 0410 Homework77
Date: _____ **Course:** Math 0410 Spring 2018

1. Simplify.

$(-12-48)\div 15-27$

$(-12-48)\div 15-27 =$ ☐

2. Solve the equation.

$5(y-2)=3y-10$

$y =$ ☐

3. Solve the equation.

$4(3x-2)=13x$

$x =$ ☐

4. Subtract.

$$\frac{1}{6}-\frac{5}{8}$$

$\frac{1}{6}-\frac{5}{8} =$ ☐ (Type an integer or a fraction.)

5. Solve the equation.

$$\frac{z}{3}=\frac{z}{5}+3$$

$z =$ ☐ (Type an integer or a fraction. Simplify your answer.)

6. Solve.

$3.9x-17=2.3x+7$

$x =$ ☐ (Type an integer or a decimal.)

7. A stereo normally priced at $349 is on sale for 5% off. Find the discount and the sale price.

The discount is $☐.

The sale price is $☐.

8. A company borrows $76,000 for 2 years at a simple interest rate of 5.5%. Find the interest paid on the loan and the total amount paid.

The interest paid on the loan is $☐.

The total amount paid is $☐.

9. Solve the equation for x.

$7(x-5)-8=-43$

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

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

10. Solve the equation for x.

$5(5x-2)=25x-10$

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

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

11. Solve the equation.

$\frac{x}{4}+4=\frac{x}{4}$

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

- **A.** x = _____
- **B.** The solution is all real numbers.
- **C.** There is no solution.

12. Solve the equation for x.

$3x+1=3(x-3)$

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.)
- **B.** The solution is all real numbers.
- **C.** There is no solution.

13. Solve the equation for y.

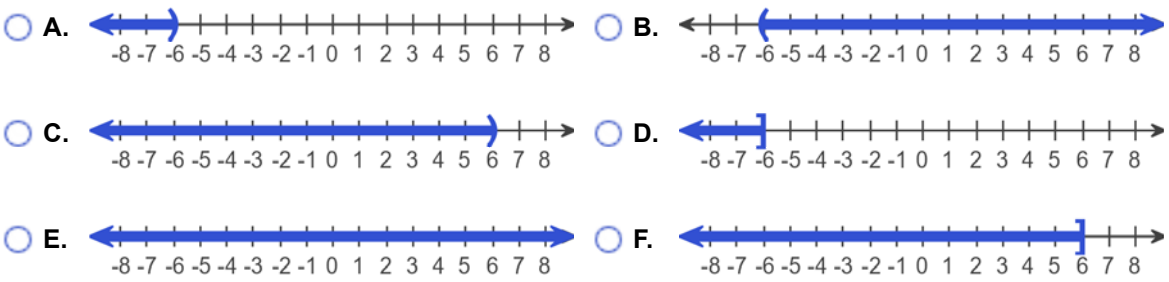
$x+y=9$

y = [ ]

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

$5x < -30$

Choose the correct graph below.

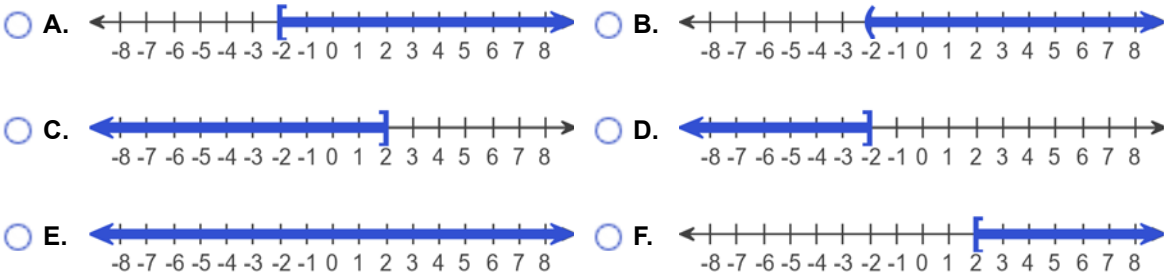


The solution to the inequality $5x < -30$ is [ ].
(Type your answer in interval notation.)

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

$-6x \leq 12$

Choose the correct graph below.



The solution to the inequality $-6x \leq 12$ is [ ].
(Type your answer in interval notation.)

16. Solve the inequality.

$-4x + 2 \geq 2(3 - x)$

The solution set is [ ]. (Type your answer in interval notation.)

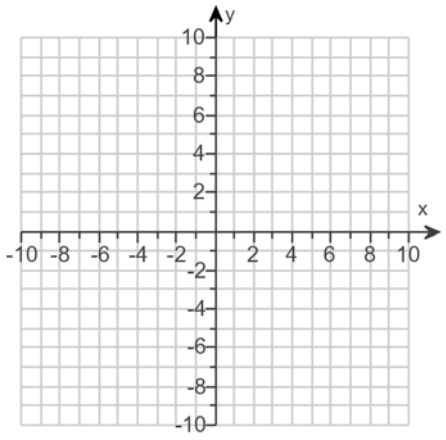
17. For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y = -4x + 4$

Find three ordered pair solutions of the given equation.

x	y
0	
1	
2	

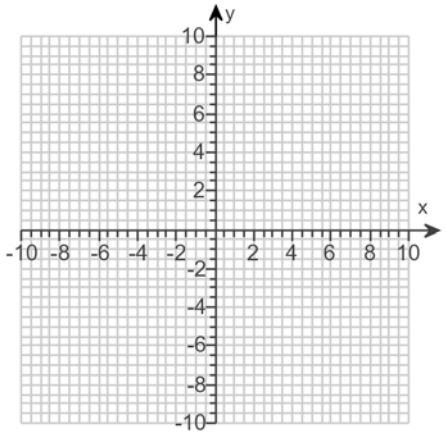
Use the graphing tool to graph the line.



18. Graph the linear equation.

$y = \frac{1}{2}x - 1$

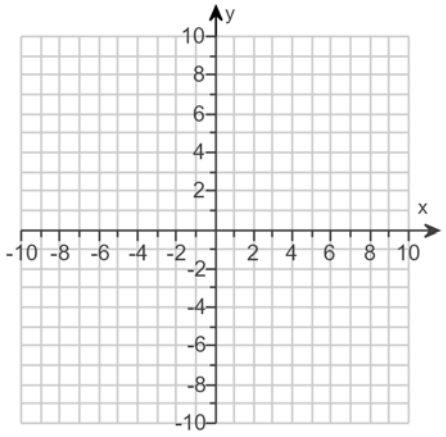
Use the graphing tool to graph the linear equation.



19. Plot the intercepts to graph the equation.

$8x - 4y = 8$

Use the graphing tool to graph the equation. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



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

$(4, -2)$ and $(6, -4)$

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

- **A.** The slope is _____. (Type an integer or a simplified fraction.)
- **B.** The slope is undefined.

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

$(-3, -7)$ and $(-3, -8)$

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

- **A.** The slope is _____. (Type an integer or a fraction. Simplify your answer.)
- **B.** The slope is undefined.

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

$(5, -1)$ and $(3, -2)$

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

- **A.** The slope is _____. (Simplify your answer.)
- **B.** The slope is undefined.

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

$(1,4)$ and $(-7,4)$

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

- **A.** The slope is _____. (Type an integer or a simplified fraction.)
- **B.** The slope is undefined.

24. Find the slope of the line.

$8x + y = 6$

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

- **A.** The slope is _____.(Simplify your answer. Type an integer or a fraction.)
- **B.** The slope is undefined.

25. Find the slope of the line.

$2x - 3y = 6$

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

- **A.** The slope of the line is _____. (Simplify your answer.)
- **B.** The slope of the line is undefined.

26. Determine whether the pair of lines are parallel, perpendicular, or neither.

$y = \frac{3}{2}x + 5$

$y = -\frac{3}{2}x$

Choose the correct answer below.

- **A.** Parallel
- **B.** Perpendicular
- **C.** Neither

27. Determine whether the pair of lines are parallel, perpendicular, or neither.

$4x = 7y + 2$
$-8x + 14y = 2$

Choose the correct answer below.

- **A.** Perpendicular
- **B.** Neither
- **C.** Parallel

28. Determine whether this pair of lines is parallel, perpendicular, or neither.

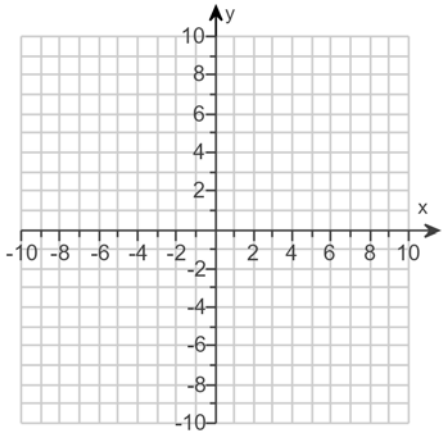
$2 + 8x = 2y$
$2x + 8y = 3$

Choose the correct answer below.

- **A.** These two lines are neither parallel nor perpendicular.
- **B.** These two lines are perpendicular.
- **C.** These two lines are parallel.

29. Use the slope-intercept form to graph the equation $3x - 5y = 15$.

Use the graphing tool to graph the line. Use the slope and y-intercept when drawing the line.



30. Find the slope-intercept form of the line whose slope is 5 and that passes through the point $(-7, 11)$.

The equation of the line is [ ].
(Type your answer in slope-intercept form.)

31. Find the slope-intercept equation of the line that has the given characteristics.

Slope -5 and y-intercept $(0,7)$

The equation is [ ].
(Simplify your answer. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the equation.)

32. 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.)

33. Determine whether each ordered pair is a solution of the system of linear equations.

$$\begin{cases} 3x - y = 5 \\ x + 4y = 19 \end{cases}$$

a. $(3,4)$
b. $(4,7)$

a. Is $(3,4)$ a solution?

- No
- Yes

b. Is $(4,7)$ a solution?

- Yes
- No

34. Solve the system of equations by the addition method.

$$\begin{cases} 3x + y = 17 \\ 4x - y = 18 \end{cases}$$

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

- **A.** The solution is [ ]. (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions; $\{(x,y) \mid 3x + y = 17\}$ or $\{(x,y) \mid 4x - y = 18\}$.
- **C.** There is no solution; $\{\}$ or $\varnothing$.

35. Solve the system of equations by the addition method.

$$\begin{cases} 4x - y = -3 \\ 6x + 3y = -27 \end{cases}$$

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

- **A.** The solution is [ ]. (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions; $\{(x,y) \mid 4x - y = -3\}$ or $\{(x,y) \mid 6x + 3y = -27\}$.
- **C.** There is no solution; $\{\}$ or $\varnothing$.

36. Solve the system of equations by the addition method.

$$\begin{cases} 4x + 2y = 0 \\ 8x + 4y = 6 \end{cases}$$

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

- **A.** The solution is _____.
  (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions; $\{(x,y) \mid 4x + 2y = 0\}$ or $\{(x,y) \mid 8x + 4y = 6\}$.
- **C.** There is no solution; $\{\}$ or $\varnothing$.

37. Solve the system of equations by the addition method.

$$\begin{cases} 3x + y = 8 \\ -6x - 2y = -16 \end{cases}$$

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

- **A.** The solution is _____. (Simplify your answer. Type an ordered pair.)
- **B.** There are infinitely many solutions; $\{(x,y) \mid 3x + y = 8\}$ or $\{(x,y) \mid -6x - 2y = -16\}$.
- **C.** There is no solution; $\{\}$ or $\varnothing$.

38. If $P(x) = x^2 + x + 2$, find $P(8)$.

$P(8) =$ ☐

39. If $Q(x) = 3x^2 - 1$, find $Q(-8)$.

$Q(-8) =$ ☐

40. Perform the indicated operation.

$$(11x - 8) + (x^2 - 11x - 4)$$

$(11x - 8) + (x^2 - 11x - 4) =$ ☐ (Simplify your answer.)

41. Subtract.

$$\left(9y^2 + 3y - 2\right) - (-5y + 6)$$

$\left(9y^2 + 3y - 2\right) - (-5y + 6) =$ ☐ (Simplify your answer.)

42. Add.

$(-3y^2 - 6y) + (2y^2 + y - 6)$

$(-3y^2 - 6y) + (2y^2 + y - 6) =$ ☐ (Do not factor.)

---

43. Add the polynomials.

$(8x^4 - x) + (11x^4 + 4x - 3)$

$(8x^4 - x) + (11x^4 + 4x - 3) =$ ☐ (Simplify your answer. Do not factor.)

---

44. Multiply.

$(x + 5)(x + 6)$

$(x + 5)(x + 6) =$ ☐ (Simplify your answer.)

---

45. Multiply.

$(a + 9)(a - 5)$

$(a + 9)(a - 5) =$ ☐

---

46. Find the following product.

$(8y - 6)^2$

$(8y - 6)^2 =$ ☐

---

47. Multiply.

$(2x - 4)(5x - 7)$

$(2x - 4)(5x - 7) =$ ☐ (Simplify your answer.)

---

48. Multiply.

$(x - 2)(x^2 - 3x + 6)$

$(x - 2)(x^2 - 3x + 6) =$ ☐

---

49. Multiply.

$(x + 4)(x^3 - 3x + 5)$

$(x + 4)(x^3 - 3x + 5) =$ ☐

---

50. Find the following product.

$(3a-7)\left(5a^2+5a+4\right)$

$(3a-7)\left(5a^2+5a+4\right) =$ ☐

---

51. Multiply vertically.

$(7x-11)(5x+1)$

$(7x-11)(5x+1) =$ ☐

---

52. Multiply vertically.

$(4x+1)(2x^2+3x-1)$

$(4x+1)(2x^2+3x-1) =$ ☐ (Simplify your answer.)

---

53. Multiply.

$(z+14)(3z+1)$

$(z+14)(3z+1) =$ ☐ (Simplify your answer.)

---

54. Find the following product.

$(8x-4)^2$

$(8x-4)^2 =$ ☐

---

55. Multiply.

$(a+3)\left(a^2-6a+6\right)$

$(a+3)\left(a^2-6a+6\right) =$ ☐

---

56. Multiply.

$(9x-7)\left(6x^2-6x-2\right)$

$(9x-7)\left(6x^2-6x-2\right) =$ ☐
(Do not factor. Simplify your answer.)

---

57. Multiply.

$(5x+2)(4x+4)$

$(5x+2)(4x+4) =$ ☐ (Simplify your answer.)

---

58. Use FOIL to multiply.

$(y + 2)(y + 9)$

$(y + 2)(y + 9) =$ ☐ (Simplify your answer.)

---

59. Find the product using the FOIL method.

$(x - 1)(x + 4)$

$(x - 1)(x + 4) =$ ☐

---

60. Use FOIL to multiply.

$(3x - 4)(x + 3)$

$(3x - 4)(x + 3) =$ ☐ (Simplify your answer.)

---

61. Multiply using the FOIL method.

$4(y - 6)(3y - 1)$

$4(y - 6)(3y - 1) =$ ☐

---

62. Multiply.

$(4x - 5)^2$

$(4x - 5)^2 =$ ☐ (Simplify your answer.)

---

63. Multiply.

$(a - 9)(a + 9)$

$(a - 9)(a + 9) =$ ☐ (Simplify your answer.)

---

64. Multiply.

$(9c + d)(9c - d)$

$(9c + d)(9c - d) =$ ☐ (Simplify your answer.)

---

65. Find the product.

$(6x - 5)(5x + 8)$

$(6x - 5)(5x + 8) =$ ☐

---

66. Use a special product to multiply, if possible.

$(b-4c)^2$

Choose the expression equivalent to $(b-4c)^2$.

- **A.** b^2+16c^2
- **B.** b^2-16c^2
- **C.** $b^2+8bc+16c^2$
- **D.** $b^2-8bc+16c^2$
- **E.** none of these

67. Simplify the following expression.

4^{-4}

$4^{-4}=$ ☐ (Type an integer or a simplified fraction.)

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

$$\left(\frac{x^{-4}y^3}{x^2y^5}\right)^3$$

$$\left(\frac{x^{-4}y^3}{x^2y^5}\right)^3 = \square$$

(Simplify your answer. Use positive exponents only.)

69. Simplify the following expression. Write the result using positive exponents.

$$\frac{\left(-3xy^{-2}\right)^{-3}}{\left(xy^{-3}\right)^{-1}}$$

$$\frac{\left(-3xy^{-2}\right)^{-3}}{\left(xy^{-3}\right)^{-1}} = \square$$

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

70. Divide using synthetic division.

$\left(7x^2+12x+10\right)\div(x+1)$

$\left(7x^2+12x+10\right)\div(x+1)=$ ☐

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

$7x+14$

$7x+14=$ ☐ (Type your answer in factored form.)

72. Factor the following polynomial.

$-12x^2y^5 - 28x^5y^4$

$-12x^2y^5 - 28x^5y^4 =$ ☐ (Factor completely.)

---

73. Factor the trinomial completely.

$x^2 - x - 20$

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

- ○ **A.** $x^2 - x - 20 =$ _____ (Type your answer in factored form.)
- ○ **B.** The polynomial is prime.

---

74. Factor the following binomial completely.

$100x^2 - 169y^2$

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

- ○ **A.** $100x^2 - 169y^2 =$ _____ (Factor completely.)
- ○ **B.** The polynomial is prime.

---

75. Solve the equation.

$x(x + 9) = 0$

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

---

76. Solve the equation.

$(7x + 8)(6x - 7) = 0$

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

---

77. Solve the equation.

$x^2 - 10x + 21 = 0$

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

1. -31

2. 0

3. -8

4. $-\frac{11}{24}$

5. $\frac{45}{2}$

6. 15

7. 17.45

   331.55

8. 8,360

   84,360

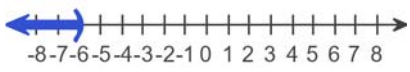
9. A. x = **0** (Simplify your answer. Type an integer or a fraction.)

10. B. The solution is all real numbers.

11. C. There is no solution.

12. C. There is no solution.

13. $9 - x$

14. A. 

    $(-\infty, -6)$

15.

A. 

$[-2, \infty)$

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16. $(-\infty, -2]$

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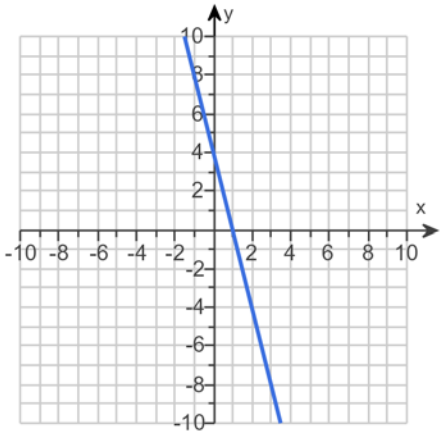
17. 4

0

-4



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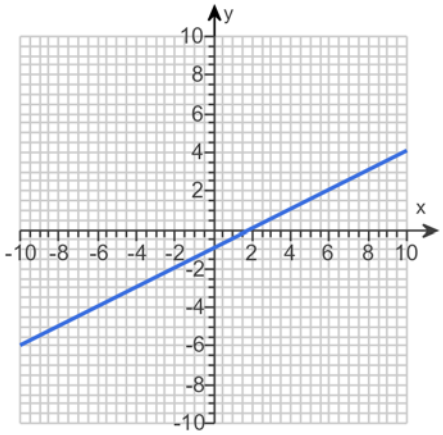

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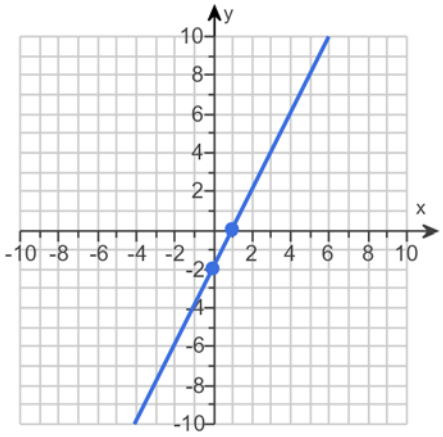

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20. A. The slope is **−1**. (Type an integer or a simplified fraction.)

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21. B. The slope is undefined.

---

22. A. The slope is $\frac{1}{2}$. (Simplify your answer.)

---

23. A. The slope is **0**. (Type an integer or a simplified fraction.)

---

24. A. The slope is **−8**.(Simplify your answer. Type an integer or a fraction.)

---

25. A. The slope of the line is $\frac{2}{3}$. (Simplify your answer.)

---

26. C. Neither

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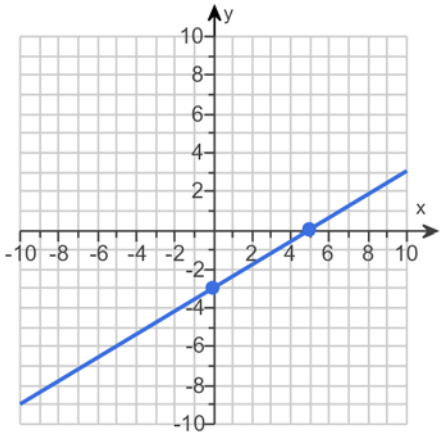
27. C. Parallel

---

28. B. These two lines are perpendicular.

29.



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30. $y = 5x + 46$

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31. $y = -5x + 7$

---

32. 27

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33. Yes

No

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34. A. The solution is **(5,2)**. (Simplify your answer. Type an ordered pair.)

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35. A. The solution is **(−2, −5)**. (Simplify your answer. Type an ordered pair.)

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36. C. There is no solution; {} or ∅.

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37. B. There are infinitely many solutions; $\{(x,y)|3x + y = 8\}$ or $\{(x,y)|-6x - 2y = -16\}$.

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38. 74

---

39. 191

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40. $x^2 - 12$

---

41. $9y^2 + 8y - 8$

---

42. $-y^2 - 5y - 6$

43. $19x^4 + 3x - 3$

44. $x^2 + 11x + 30$

45. $a^2 + 4a - 45$

46. $64y^2 - 96y + 36$

47. $10x^2 - 34x + 28$

48. $x^3 - 5x^2 + 12x - 12$

49. $x^4 + 4x^3 - 3x^2 - 7x + 20$

50. $15a^3 - 20a^2 - 23a - 28$

51. $35x^2 - 48x - 11$

52. $8x^3 + 14x^2 - x - 1$

53. $3z^2 + 43z + 14$

54. $64x^2 - 64x + 16$

55. $a^3 - 3a^2 - 12a + 18$

56. $54x^3 - 96x^2 + 24x + 14$

57. $20x^2 + 28x + 8$

58. $y^2 + 11y + 18$

59. $x^2 + 3x - 4$

60. $3x^2 + 5x - 12$

61. $12y^2 - 76y + 24$

62. $16x^2 - 40x + 25$

63. $a^2 - 81$

64. $81c^2 - d^2$

65. $30x^2 + 23x - 40$

66. D. $b^2 - 8bc + 16c^2$

67. $\frac{1}{256}$

68. $\frac{1}{x^{18}y^6}$

69. $-\frac{y^3}{27x^2}$

70. $7x + 5 + \frac{5}{x+1}$

71. $7(x + 2)$

72. $4x^2y^4\left(-3y - 7x^3\right)$

73. A. $x^2 - x - 20 =$ **(x + 4)(x − 5)** (Type your answer in factored form.)

74. A. $100x^2 - 169y^2 =$ **$(10x + 13y)(10x - 13y)$** (Factor completely.)

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75. $0, -9$

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76. $-\frac{8}{7}, \frac{7}{6}$

---

77. 7,3
