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1. Simplify by combining like terms.

$$-9 + 7m + 14 - 9m$$

○A. $-2m + 5$

○B. $-3m + 4$

○C. $-m + 5$

○D. $-m - 5$

Answer: A

2. Evaluate the following for $x = -4$, $y = 5$, and $z = -5$.

$$\frac{x^2 - y^2}{y^2 + z^2}$$

For $x = -4$, $y = 5$, and $z = -5$, $\dfrac{x^2 - y^2}{y^2 + z^2} = \boxed{}$.

(Type an integer or a simplified fraction.)

Answer: $-\dfrac{9}{50}$

3. Find the GCF.

$$64a^8b^3, \ 40a^6b^8$$

○A. $8a^8b^8$

○B. $4a^2b^5$

○C. $320a^8b^8$

○D. $8a^6b^3$

Answer: D

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4. Solve the quadratic equation.

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

The solution is x = ☐.
(Use a comma to separate answers as needed.)

Answer: $-\dfrac{1}{3}, 2$

5. Solve.

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

x = ☐
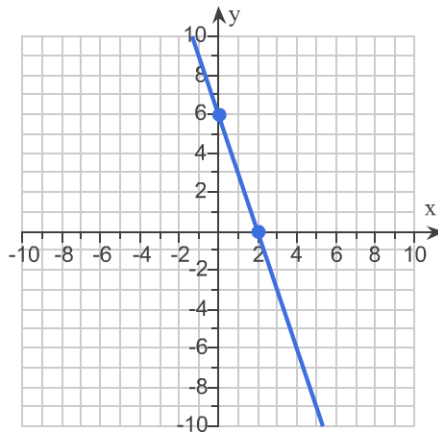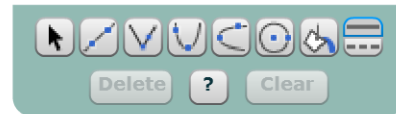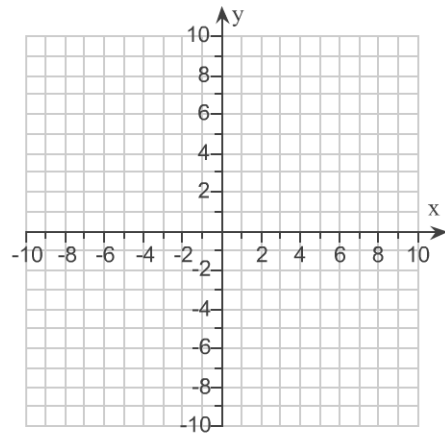
Answer: -2

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6. Use the intercepts to graph the equation.

    $3x + y = 6$

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

    Click to enlarge graph

Answer:

7. Solve for the missing variable in the formula.

    $d = rt$ (distance formula); $d = 145, t = 29$

    $r = \boxed{}$

    Answer: 5

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8. Solve the equation.

    $$0.2(v + 0.6) = 0.4(v - 4.2)$$

    The solution is v = ☐. (Type an integer or a decimal.)

    Answer: 9

9. Simplify the expression.

    $$(11^6)^5$$

    $(11^6)^5 =$ ☐
    (Simplify your answer. Type exponential notation using positive exponents.)

    Answer: 11^{30}

10. Solve the equation.

    $$1.7(y + 6) - (6.7 + 0.7y) = -3 + 2$$

    The solution is y = ☐.
    (Simplify your answer. Type an integer or a decimal.)

    Answer: -4.5

11. Simplify and write with positive exponents.

    $$\frac{x^{-6}}{x^{10}}$$

    $\dfrac{x^{-6}}{x^{10}} =$ ☐ (Use positive exponents only. Simplify your answer.)

    Answer: $\dfrac{1}{x^{16}}$

12. Solve the equation.

    $$n^2 - 3n - 28 = 0$$

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

    Answer: $-4, 7$

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13. Divide the polynomial by the monomial.

$$\frac{6m^3 + 8m}{2m^2}$$

$$\frac{6m^3 + 8m}{2m^2} = \boxed{}$$

(Simplify your answer. Use positive exponents only.)

Answer: $3m + \dfrac{4}{m}$

14. Find the slope of the line through the pair of points.

$(-2, -7)$ and $(6, 7)$

- A. $\dfrac{7}{4}$

- B. $\dfrac{4}{7}$

- C. $-\dfrac{7}{4}$

- D. $-\dfrac{4}{7}$

Answer: A

15. Find the product.

$6xy^5(3xy^2 - 5xy + 5x)$

$6xy^5(3xy^2 - 5xy + 5x) = \boxed{}$

(Simplify your answer.)

Answer: $18x^2y^7 - 30x^2y^6 + 30x^2y^5$

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16. Find the slope of the line containing the pair of points.

$(8, -5)$ and $(7, -12)$

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. Type an integer or a fraction.)

○ B. The slope is undefined.

Answer: A, 7

17. How much will it cost to carpet a rectangular room measuring 9 m by 23 m, if carpeting costs $28.25 per square meter?

○ A. $1,808.00

○ B. $11,695.50

○ C. $904.00

○ D. $5,847.75

Answer: D

18. Solve the equation.

$9x - 3x = -48$

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

Answer: -8

19. Subtract. Write the resulting polynomial in descending order of degree.

$(10p^2 + 11p + 4) - (5p^2 + 16p - 8)$

○ A. $5p^2 - 5p - 4$

○ B. $5p^4 - 5p^2 + 12$
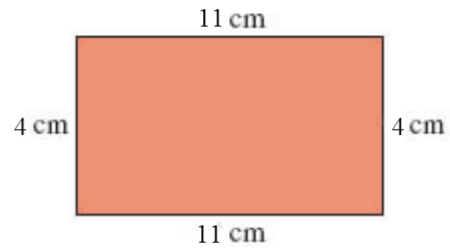
○ C. $5p^2 - 5p + 12$

○ D. $5p^2 + 5p - 12$

Answer: C

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20.   Find the perimeter of the polygon.

11 cm

4 cm   4 cm

11 cm

The perimeter of the polygon is ☐ cm.

Answer: 30

21.   Find the product.

$(3x + 11)(3x - 11)$

A. $3x^2 - 66x - 121$

B. $9x^2 - 121$

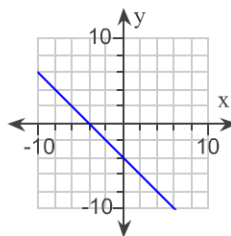C. $9x^2 + 66x - 121$

D. $9x^2 - 66x - 121$

Answer: B

22.   Complete the ordered pairs. Then graph the equation by plotting the points and drawing a line through them.

$y + 4 = x$ $(0, \ ), (\ ,0), (5, \ )$
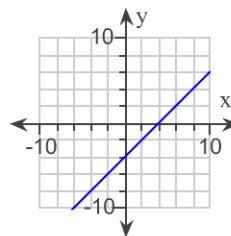
A. $(0,4), (4,0), (5, -1)$
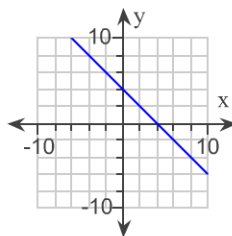
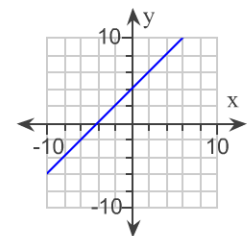B. $(0, -4), (-4,0), (5, -9)$

C. $(0, -4), (4,0), (5,1)$

D. $(0,4), (-4,0), (5,9)$

Answer: C

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23. Factor the binomial. If the binomial is not factorable, choose "prime."

$r^2 - 16s^2$

○A. $(r-4s)(r+4s)$

○B. $(r^2-4s)(r^2+4s)$

○C. $(r-4s)(r-4s)$

○D. prime

Answer: A

24. Factor completely.

$6v^2 - 11v - 35$

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

○A. The answer is ☐.

○B. The expression is prime.
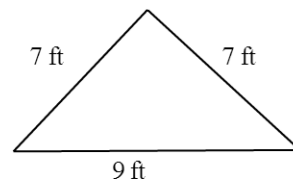
Answer: A, $(2v-7)(3v+5)$

25. Divide and simplify.

$\dfrac{p^3}{p^{-1}}$

$\dfrac{p^3}{p^{-1}} = \boxed{}$

(Simplify your answer. Type exponential notation using positive exponents.)

Answer: p^4

26. Find the perimeter of the triangle.

7 ft   7 ft

9 ft

Perimeter $= \boxed{}$ ft

Answer: 23

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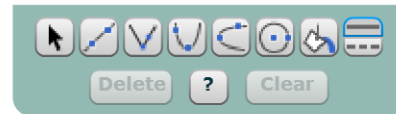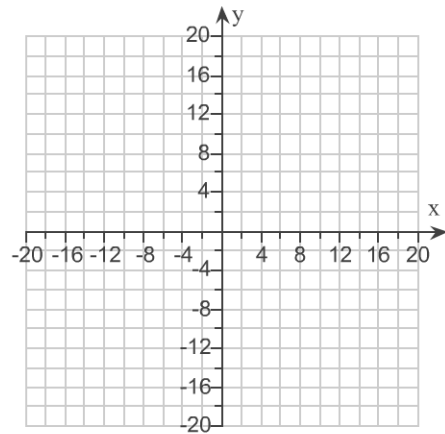
Assignment: MAT 0022 Final Exam Practice

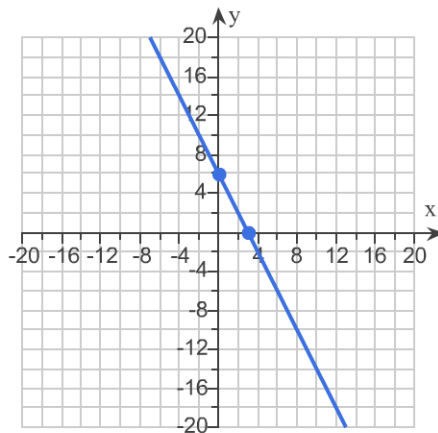27. Graph using the slope and the y-intercept.

$2x + y = 6$

The slope is m = ☐ .
(Type an integer or a fraction.)

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

Click to enlarge graph

Answers   − 2

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28. Solve the equation.

$$\frac{2}{3}x - 1 = \frac{7}{9}x$$

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

○ A. The solution set is $\{\boxed{}\}$. (Simplify your answer.)

○ B. There is no solution.

Answer: A, -9

29. Simplify the expression.

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

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

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

Answer: $\dfrac{1}{x^{25}}$

30. Solve.

$$1.6y - 1.9 - 0.3y = 4.6$$

The solution is $y = \boxed{}$. (Type an integer or a decimal.)

Answer: 5

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31.   Factor by grouping.

$uv - 6u + 5v - 30$

    ○A. $(v + 6)(u - 5)$

    ○B. $(v - 6)(u + 5)$

    ○C. $(v - 6)(u - 5)$

    ○D. $5u(v - 6)$

Answer: B

32.   Of the 8760 hours in a year, one television was on for 438 hours. What percent is this?

The percent is ☐ %
(Type a whole number or a decimal.)

Answer: 5

33.   Translate the mathematical sentence into English.

$6(7 - x) = 44$

Three correct translations are shown. Which translation is NOT correct?

    ○A. The product of six and the difference between seven and some number is forty-four.

    ○B. Six times the difference between some number and seven is forty-four.

    ○C. The difference of seven and some number is multiplied by six and the result is forty-four.

    ○D. Subtract some number from seven and multiply the difference by six. That product is equal to forty-four.

Answer: B

34.   Solve the equation.

$-8 = 3x - 5$

The solution is $x = $ ☐ .

Answer: -1

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

$(6,5)$ and $(8,4)$

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

○ A. The slope is m = ☐ . (Simplify your answer. Type an integer or a fraction.)

○ B. The slope is undefined.

Answer: A, $-\dfrac{1}{2}$

36. Factor completely.

$8x^2y^2 + 16xy^2 + 6y^2$

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

○ A. $8x^2y^2 + 16xy^2 + 6y^2 = $ ☐

○ B. The polynomial is prime.

Answer: A, $2y^2(2x+3)(2x+1)$

37. Solve for h.

$B = hp$

h = ☐

Answer: $\dfrac{B}{p}$

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38. Factor the expression completely. If the polynomial is not factorable, choose "prime."

$t^2 - 14t + 48$

○ A. $(t - 24)(t - 2)$

○ B. $(t + 6)(t + 8)$

○ C. $(t - 6)(t - 8)$

○ D. prime

Answer: C

39. Solve for the missing number.

$$\frac{-11}{n} = \frac{8}{56}$$

The solution is n = ☐ .

Answer: -77

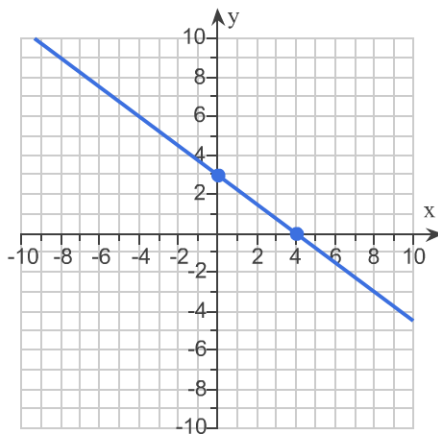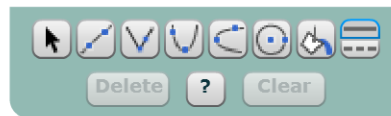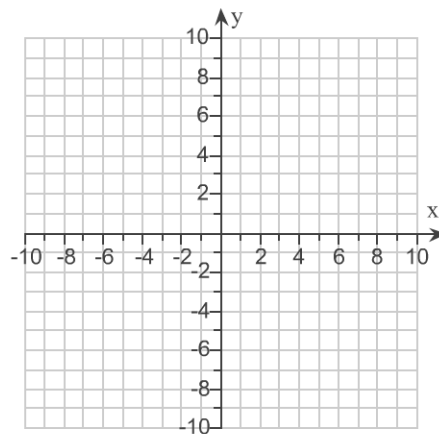| Student: _____ | Instructor: Kim Ziegler | Assignment: MAT 0022 Final Exam |
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40. Find the intercepts and then use them to graph the equation.

$$3x + 4y = 12$$

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

Click to enlarge graph

Answer:

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41. Find the perimeter of the square.

Each side is 62 feet.

The perimeter is ☐

ft^2.
ft.
ft^3.

Answers   248

        ft.

42. Solve the equation.

$$-3x - 5 = 19$$

$x = $ ☐

Answer: -8

43. Simplify using the laws of exponents.

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

○A. $15xy^6$

○B. $15x^5y^6$

○C. $15xy^5$

○D. $15x^6y^5$

Answer: B

44. Solve and check the following equation.

$$9(y - 1) = 4y + 21$$

$y = $ ☐

Answer: 6

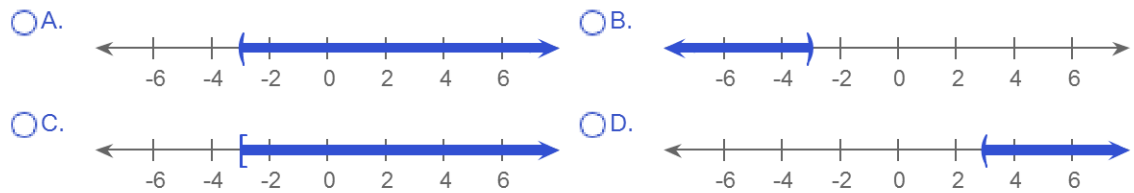| Student: _____ | Instructor: Kim Ziegler | Assignment: MAT 0022 Final Exam |
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45. Solve the inequality. Express the solution set in interval notation and graph it.

$7 - 5x < 22$

Which is the correct interval notation for the solution set?

○A. $[-3, \infty)$

○B. $(-\infty, -3)$

○C. $(-3, \infty)$

○D. $(3, \infty)$

Which of the four graphs below is the graph of the solution set?

○A.

○B.

○C.

○D.

Answers   C

A

46. Multiply.

$2c^4 d^3 (9c^4 d^5 - 2c^3 d)$

$2c^4 d^3 (9c^4 d^5 - 2c^3 d) = \boxed{}$

(Simplify your answer.)

Answer: $18c^8 d^8 - 4c^7 d^4$

47.   Determine whether the following is an identity or a contradiction and indicate the solutions.

$$5x + 17 = 5(x + 3) + 2$$

Choose the correct answer below.

○A. The equation is a contradiction. All real numbers are solutions.

○B. The equation is an identity. All real numbers are solutions.

○C. The equation is an identity. There are no solutions.

○D. The equation is a contradiction. There are no solutions.

Answer: B

48.   Solve for h.   The solution is h = ☐ .

$a = hm$

Answer: $\dfrac{a}{m}$

49.   Factor the trinomial.

$$w^2 + 4w + 77$$

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

○A. The answer is ☐ .

○B. The polynomial is prime.

Answer: B

50. Determine whether the following is an identity or a contradiction and indicate the solutions.

$$4x + 8 = 4(x + 1) + 4$$

Choose the correct answer below.

○ A. The equation is an identity. All real numbers are solutions.

○ B. The equation is a contradiction. There are no solutions.

○ C. The equation is an identity. There are no solutions.

○ D. The equation is a contradiction. All real numbers are solutions.

Answer: A

51. Factor.

$$w^2 + 10w + 25$$

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

○ A. $w^2 + 10w + 25 = \boxed{}$

○ B. The expression is prime.

Answer: A, $(w + 5)^2$

52. Solve. $x = \boxed{}$

$$4x + 8 = 16$$

Answer: 2

53. Emily earns $460 per week and has 24% of this amount withheld for taxes, Social Security, and Medicare. Find the amount withheld.

The amount withheld is $\boxed{}$.
(Type a whole number or a decimal.)

Answer: 110.40

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54. Simplify the expression. Assume that variables represent nonnegative numbers.

$$\sqrt{75a^3b^2}$$

○A. $5ab\sqrt{3a}$

○B. $3a^2\sqrt{5b}$

○C. $15ab$

○D. $8ab\sqrt{3a}$

Answer: A

55. Simplify. Express answers with positive exponents only.

$$(x^2y^{-5})^6$$

○A. $\dfrac{x^8}{y^{11}}$

○B. $x^{12}y^{30}$

○C. $-x^8y^{11}$
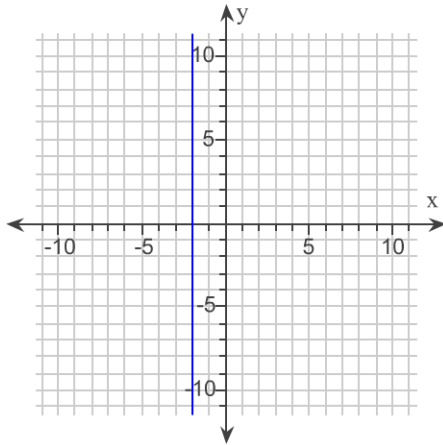
○D. $\dfrac{x^{12}}{y^{30}}$

Answer: D

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56. Find the slope of the line.

    ○A. $\dfrac{3}{2}$

    ○B. -2

    ○C. 0

    ○D. Undefined

Answer: D

57. Use the power rule and the power of a product or quotient rule to simplify the expression.

$$(pq)^7$$

$(pq)^7 = \boxed{}$ (Type your answer using exponential notation.)

Answer: $p^7 q^7$

58. Solve the equation and check the solution.

$$3(2z-1) - 2(z+6) = 2(z+1)$$

The solution is $z = \boxed{}$. (Type an integer or a simplified fraction.)

Answer: $\dfrac{17}{2}$

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59. Write the solution set and graph.

$$\frac{x}{2} + 1 \leq \frac{5}{2}$$

The solution set is $\{x \mid x \leq \boxed{}\}$.
(Simplify your answer. Type an integer or a fraction.)

Which of the following graphs represents the solution set?

○A.
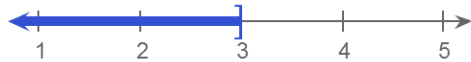○B.
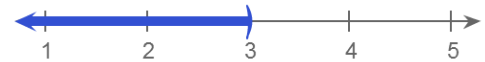○C.
○D.

Answers   3

C

60. Simplify the expression.

$$\frac{(p^3)^2(-p^2)^4}{(p^5)^6}$$

$$\frac{(p^3)^2(-p^2)^4}{(p^5)^6} = \boxed{}$$

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

Answer: $\dfrac{1}{p^{16}}$

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61. Factor the trinomial.

$r^2 + 3rz - 28z^2$

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

A. The answer is ▢.

B. The polynomial is prime.

Answer: A, $(r - 4z)(r + 7z)$

62. Translate the sentence to an equation and solve.

$\dfrac{5}{6}$ of a number s is equal to 20.

Choose the correct equation.

A. $\dfrac{5}{6}s = 20$

B. $\dfrac{5}{6} + s = 20$

C. $\dfrac{5}{6} = 20s$

D. $\dfrac{5}{6} = 20 + s$

The solution is s = ▢.

Answers   A

24

63. Gwen earns $580 per week and has 24% of this amount withheld for taxes, Social Security, and Medicare. Find the amount withheld.

The amount withheld is $▢.
(Type a whole number or a decimal.)

Answer: 139.20

Student: _____	Instructor: Kim Ziegler	Assignment: MAT 0022 Final Exam
Date: _____	Course: ZIEGLER CRN 26885 MAT	Practice
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	Book: Jordan: Integrated Arithmetic &	
	Basic Algebra, 5e	

64. Solve the inequality and write the solution set. Then graph the solution set.

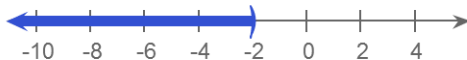$8 - u > 12 + u$

Choose the solution set.

A. $\{u \mid u < -2\}$　　　　　　B. $\{u \mid u < -4\}$
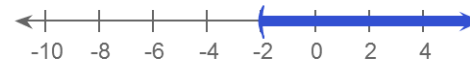
C. $\{u \mid u \geq -2\}$　　　　　　D. $\{u \mid u > -2\}$

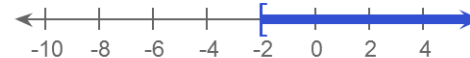Choose the correct graph of the solution set.

A. 　　　　　　B.

C. 　　　　　　D.

Answers　A

　　　　　A

65. Multiply.

$(5v + 6)(5v - 6)$

$(5v + 6)(5v - 6) = \boxed{}$　(Simplify your answer.)

Answer:　$25v^2 - 36$

66. Evaluate the following.

$$\frac{(-7)(-5) - [5(-4) + 9^2]}{(-5)^2(2) - 9}$$

$$\frac{(-7)(-5) - [5(-4) + 9^2]}{(-5)^2(2) - 9} = \boxed{}$$

(Type an integer or a simplified fraction.)

Answer:　$-\dfrac{26}{41}$

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67. Find the following quotient of the polynomial and monomial.

$$\frac{12a^8g^9 - 8a^6g^7}{4a^4g}$$

$$\frac{12a^8g^9 - 8a^6g^7}{4a^4g} = \boxed{}$$

(Simplify your answer. Type exponential notation with positive exponents. Do not factor.)

Answer: $3a^4g^8 - 2a^2g^6$

68. Solve.

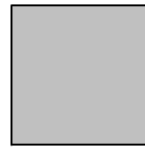A ballplayer made 563 field goals of 902 attempts. What percent of his field goal attempts did he make?

The ballplayer made $\boxed{}$% of his field goal attempts.
(Round to the nearest tenth.)

Answer: 62.4

69. Find the perimeter of the square.

35.3 mm on a side

The perimeter is $\boxed{}$ $\begin{array}{l} \text{mm}^3. \\ \text{mm.} \\ \text{mm}^2. \end{array}$

(Type a whole number or a decimal.)

Answers   141.2

           mm.

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70.   Simplify the expression.

$$(3c^2d^3)^3 + (-4cd^8)(7c^5d)$$

$(3c^2d^3)^3 + (-4cd^8)(7c^5d) = \boxed{}$

(Simplify your answer. Type exponential notation with positive exponents.)

Answer: $-1c^6d^9$

71.   Solve. $x = \boxed{}$

$$6 - 4x = 7x - 9x - 6$$

Answer: 6

72.   Factor completely.

$$3v^2 - 4v - 15$$

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

   ○A. $3v^2 - 4v - 15 = \boxed{}$

   ○B.   The expression is prime.

Answer: A, $(3v + 5)(v - 3)$

73.   Jim drove 78 miles in 2 hours. If he can keep the same pace, how long will it take him to drive 1,014 miles?

   ○A.   156 hours

   ○B.   26 hours

   ○C.   52 hours

   ○D.   36 hours

Answer: B

74. Solve the following formula for t.

$$G = W + Wrt$$

t = ☐ (Simplify your answer.)

Answer: $\dfrac{G - W}{Wr}$

75. Multiply.

$(2x + 8)(x - 9)$

- ○ A. $x^2 - 10x - 11$
- ○ B. $x^2 - 72x - 10$
- ○ C. $2x^2 - 11x - 72$
- ○ D. $2x^2 - 10x - 72$

Answer: D

76. Simplify.

$$(x^4)^{-5}$$

$(x^4)^{-5} = $ ☐ (Simplify your answer. Use positive exponents only.)

Answer: $\dfrac{1}{x^{20}}$

77. Solve the following equation.

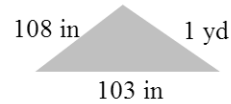$$5x + 2 = 3(x + 2)$$

The solution is x = ☐. (Simplify your answer.)

Answer: 2

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78. Find the perimeter of the triangle.

108 in   1 yd

103 in

What is the perimeter? ☐ in

Answer: 247

79. Solve the inequality and write the solution set. Then graph the solution set.
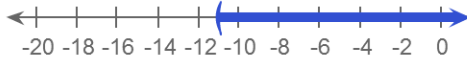
$$\frac{1}{2}(u+2) \le \frac{1}{4}(u-7)$$

Write the solution set.

$\{u \mid u \le \boxed{}\}$

(Simplify your answer. Type an integer or a fraction.)
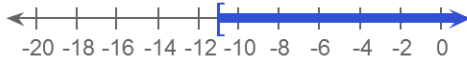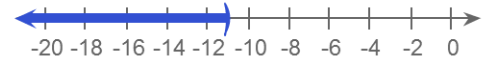
Choose the correct graph of the solution set.

○ A.
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0

○ B.
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0

○ C.
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0

○ D.
-20 -18 -16 -14 -12 -10 -8 -6 -4 -2 0

Answers -11

              B

80. Solve for the indicated variable.

$z = 5 + y$, for y

The solution is $y = \boxed{}$.

Answer: $z - 5$