

Math II Summer Packet Skills List

1. Identifying components of terms: Constant, Coefficient, Base, Exponents, etc.
2. Exponent Rules
3. Perfect Squares
4. Operations with rational numbers
5. Distributive Property: expressions and equations
6. Determining Factors a number
7. Graphing Linear and Exponential Functions from a table or given $f(x)$ with key features
8. Comparing rate of change between functions
9. Determine function values
10. Transformation of linear and exponential functions using functions notation
11. Linear Regression
12. Solving systems algebraically and graphically
13. Solving systems inequalities algebraically and graphically
14. Describing elements of a two-way table
15. Interpreting two-way tables
16. Pythagorean Theorem
17. Triangles: Congruence, Properties
18. Parallel Properties and Perpendicularity
19. Finding measures of angles
20. Transformations: Translations, Rotations, Reflections
21. Perimeter and Area of Triangles, Circles, Parallelograms
22. Volume of Cylinders and Prisms

1. Identify the terms, coefficients, constants, and factors of $10x^2 - 2x + 4x^2 + 3x - 12 = 14x^2 + x - 12$

terms: $14x^2, x, -12$ coefficients: $14, 1, -12$ constants: -12 factors: $14, x^2, 1, x$

2. Explain why the expression $2 \cdot 3^x$ is not equivalent to the expression 6^x .

You need to follow exponent properties.
Since the bases 2 and 3 are not the same, you can not combine them.

3. The sum of 4, a , and b is represented by the expression $4 + a + b$. If the sum is negative, which of the following statements must be true?

- a. $a + b$ is greater than 0.
- b. $a + b$ must equal 0.
- c. $a + b$ is less than negative 4.
- d. $a + b$ is greater than 4.

4. Determine whether each expression is a monomial. Write yes or no. Explain your reasoning.

a. 10: Yes

b. $5x + 3$: No, two terms

c. $\frac{7}{x^2}$: No, the exponent is not a whole number ($7x^{-2}$)

d. $6x^2 - x + 9$: No, three terms

e. $24xy^2$: Yes

f. j : Yes

5. What value can be placed in each box to create a true statement?

a. $(b^{\square})^5 = b^{15}$ 3

b. $g^{\square} \cdot g^6 = g^{11}$ 5

c. $(a^2 \cdot a^{\square})^3 = a^{18}$ 4

6. Given the area of a circle is πr^2 , express the area of the circle with radius $2xy^2$ as a monomial.

$$\text{Area} = \pi r^2 \quad \text{and} \quad r = 2xy^2$$

$$\boxed{\text{Area} = 4x^2y^4\pi}$$

7. Express the area of a square with sides of length $3xy^2$ as a monomial.

$$\text{Area} = s^2 \quad \text{and} \quad s = 3xy^2$$

$$\boxed{\text{Area} = 9x^2y^4}$$

8. The set of natural numbers are $\{0,1,2,3,\dots\}$. Which of these radicals have natural number solutions?

a. $\sqrt{50}$

b. $\sqrt{25}$

c. $\sqrt{9} + \sqrt{4}$

d. $\sqrt{6}$

9. What must be true about a for the statement $\sqrt{7a} \cdot \sqrt{36} = 7 \cdot 6 = 42$ to be true?

$$\boxed{a = 7}$$

#10 – 15 should be done without a calculator.

10. Which fraction is larger?

$$\boxed{\frac{2}{3}} \quad \text{or} \quad \frac{7}{18}$$

11. Circle any values that are equivalent:

$$\left(\frac{2}{5}\right), \frac{6}{8}, \left(\frac{6}{15}\right), \frac{9}{30}, \left(\frac{14}{35}\right), \left(\frac{20}{50}\right)$$

12. Evaluate: $\frac{1}{3} \cdot \frac{3}{7} \cdot \frac{8}{2} = \boxed{\frac{4}{7}}$

13. Evaluate: $\frac{2}{5} + \frac{4}{5} = \boxed{\frac{6}{5}}$

14. Evaluate: $\frac{2}{3} - \frac{7}{4} = \boxed{\frac{-13}{12}}$

15. Convert to an improper fraction: $6\frac{3}{4} = \boxed{\frac{27}{4}}$

16. Rebecca, Anna, and Jenna tried to solve the equation $40 - 4(x + 3) = 7x - 5$. They got three different results. Who has the correct result? What mistakes did each of the others make?

| | |
|---|---|
| <p>Rebecca</p> $40 - 4(x + 3) = 7x - 5$ $40 - 4x + 12 = 7x - 5$ $52 - 4x = 7x - 5$ $52 - 4x + 5 = 7x - 5 + 5$ $57 - 4x = 7x$ $57 - 4x + 4x = 7x + 4x$ $57 = 11x$ $\frac{57}{11} = x$ | <p>Anna</p> $40 - 4(x + 3) = 7x - 5$ $40 - 4x + 3 = 7x - 5$ $43 - 4x = 7x - 5$ $39x = 7x - 5$ $39x - 7x = 7x - 5 - 7x$ $32x = -5$ $x = \frac{5}{32}$ |
| <p>Jenna * Correct</p> $40 - 4(x + 3) = 7x - 5$ $40 - 4x - 12 = 7x - 5$ $28 - 4x = 7x - 5$ $28 - 4x + 4x = 7x - 5 + 4x$ $28 = 11x - 5$ $28 + 5 = 11x - 5 + 5$ $33 = 11x$ <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">$3 = x$</div> | |

17. Simplify the following expressions:

a. $11(a + 5b - 3c)$

$11a + 55b - 33c$

b. $7 - 5(y - 11)$

$-5y + 62$

c. $2(3z + 1) - (z - 6)$

$5z + 8$

18. The factors of $1176 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 7 \cdot 7 = 2^3 \cdot 3 \cdot 7^2$. Find the factors of the following:

a. 98

$$= 2 \cdot 7 \cdot 7$$

$= 2 \cdot 7^2$

b. 810

$$= 2 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 5$$

$= 2 \cdot 3^4 \cdot 5$

c. 72

$$= 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$$

$= 2^3 \cdot 3^2$

19. Since $64 = 2^6 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$, paired factors of the number 64 are as follows:

$$\begin{aligned} 1 \cdot 64 &= 2^6 \\ 2 \cdot 32 &= 2^1 \cdot 2^5 \\ 4 \cdot 16 &= 2^2 \cdot 2^4 \\ 8 \cdot 8 &= 2^3 \cdot 2^3 \end{aligned}$$

Find the paired factors of the following numbers that meet the criteria given.

- Two numbers that multiply to 36 whose sum is 15. $12 \cdot 3 = 36$ and $12 + 3 = 15$
- Two numbers that multiply to -21 whose sum is -4 . $(-7) \cdot (3) = -21$ and $-7 + 3 = -4$
- Two numbers that multiply to 60 whose sum is -17 . $(-12) \cdot (-5) = 60$ and $-12 + (-5) = -17$

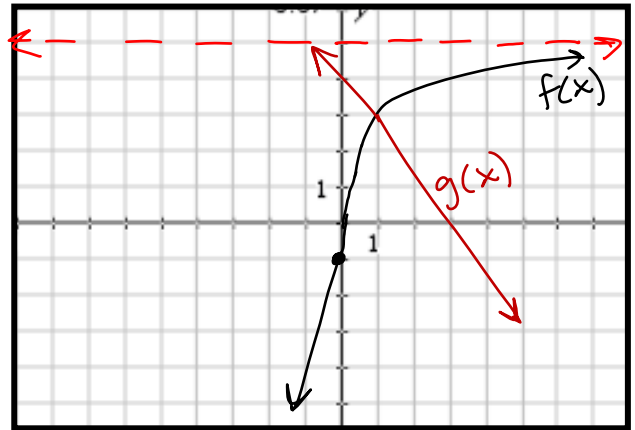
20. On the axes to the right, graph each of the following:

$f(x)$ is exponential with an asymptote at $y = 5$

$g(x)$ is linear with a negative slope

$f(x) = g(x)$ at an x -value of $x = 1$

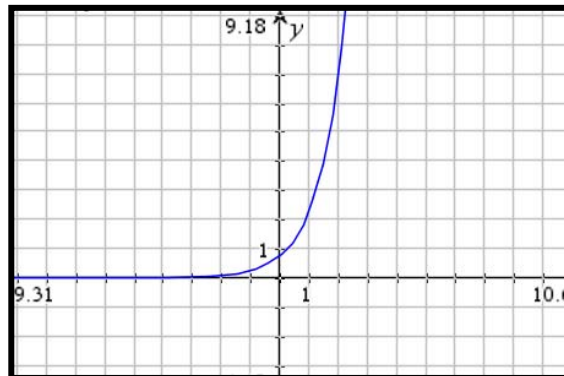
Answers Vary



21. Which of the following statements is true about the functions $f(x)$ and $g(x)$?

$$f(x) = 3(2)^x$$

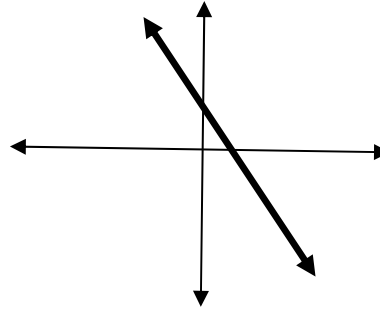
$$g(x) =$$



- The y -intercept of function $f(x)$ is less than the y -intercept of the function $g(x)$.
- The y -intercept of function $f(x)$ is greater than the y -intercept of the function $g(x)$.
- The y -intercept of function $f(x)$ is equal to the y -intercept of the function $g(x)$.
- The y -intercepts cannot be determined.

22. Which of the following could be the equation of the line graphed? Circle all that apply.

- a. $f(x) = \frac{1}{2}x + 3$
- b. $f(x) = -400x + 520$
- c. $f(x) = \frac{4}{7}x - 15$
- d. $23x + 16y = 200$
- e. $47y - 27x = 110$
- f. $60x + 81y = -90$



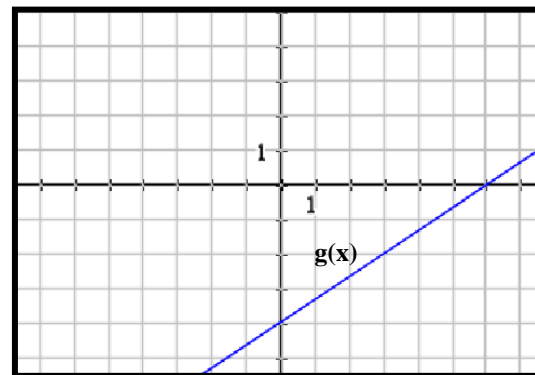
23. If the given table represents a linear function, which of the following is true? Circle all that apply.

- a. The y-intercept of the graph is negative.
- b. The function is decreasing.
- c. The graph of the function has an asymptote at $y = -13$.
- d. $f(2) = -1$

| x | $f(x)$ |
|-----|--------|
| -6 | -13 |
| -4 | -10 |
| 2 | -1 |
| 4 | 2 |

24. Given the table and the graph below, which of the following statements is true about the linear functions $f(x)$ and $g(x)$?

| x | $f(x)$ |
|-----|--------|
| -9 | -10 |
| -6 | -6 |
| -3 | -2 |
| 0 | 2 |



- a. The function $f(x)$ has a greater rate of change than the function $g(x)$.
- b. The function $g(x)$ has a greater rate of change than the function $f(x)$.
- c. The rates of change for both $g(x)$ and $f(x)$ are equal.
- d. The rates of change cannot be determined.

25. Given that $f(x)$ is linear, and $g(x)$ is exponential, which has a greater rate of change in the domain $[1,5]$?

$$g(x) = 2(3)^x$$

| | | | | | |
|--------|---|----|----|----|----|
| x | 1 | 2 | 3 | 4 | 5 |
| $f(x)$ | 7 | 12 | 17 | 22 | 27 |

The function $g(x)$ has a greater rate of change.

26. Nicholas and Jacob were having an argument about who could run more miles in one week. On the first day, they both ran one mile. Every day thereafter, Nicholas will run 7 miles per day, and Jacob will double the amount of miles he runs from one day to the next.

* Answers may vary

a. Create functions for each of these scenarios

Nicholas:

$$n(x) = 1 + 7(x-1)$$

Jacob:

$$j(x) = 1 \cdot (2)^{x-1}$$

where $n(x)$ and $j(x)$ are the total miles ran after x days

b. Which function increases faster for the first few days?

| | |
|-----|--------|
| x | $n(x)$ |
| 1 | 1 |
| 2 | 8 |
| 3 | 15 |

| | |
|-----|--------|
| x | $j(x)$ |
| 1 | 1 |
| 2 | 2 |
| 3 | 4 |

$n(x)$ increases faster in the first few days.

c. Which function has a greater rate of change over this week long time period?

$j(x)$ has a greater rate of change over the week.

d. If the men planned on running for 1 week, who would run more miles?

Nicholas would run 43 miles and Jacob would run 64 miles.

Jacob would run 21 more miles than Nicholas.

27. What is the rate of change for the function $f(x) = 2(3)^{\frac{x}{7}}$ over the interval $[14,35]$?

$$(14, 18)$$

$$(35, 486)$$

rate of change : $\frac{156}{7}$

28. If $f(x) = -3x + 2$ and the domain of f is $\{3,4,5\}$, what is the range of $f(x)$?

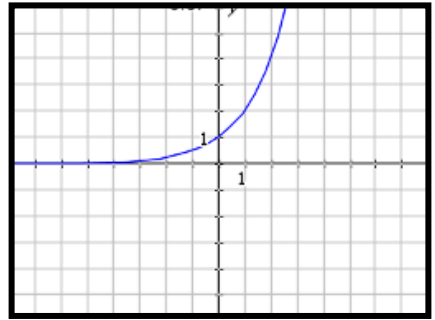
$$\text{Range: } \{-7, -10, -13\}$$

29. Answer the following questions for the graph of $f(x)$ and $g(x)$ to the below:

a. What is the values of $f(2)$, $g(3)$, and $g(-6)$?

$$f(2) = 4 \quad g(3) = -1 \quad g(-6) = 5$$

$f(x) =$



b. What does the point $(0,1)$ represent?

The y-intercept of both graphs.

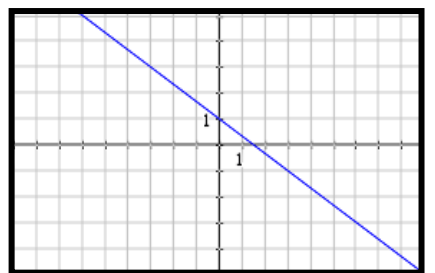
c. Create a scenario for both $f(x)$ and $g(x)$.

Answers vary.

d. Create a function that has a greater rate of change than $g(x)$. Create a scenario for this new function.

Answers vary.

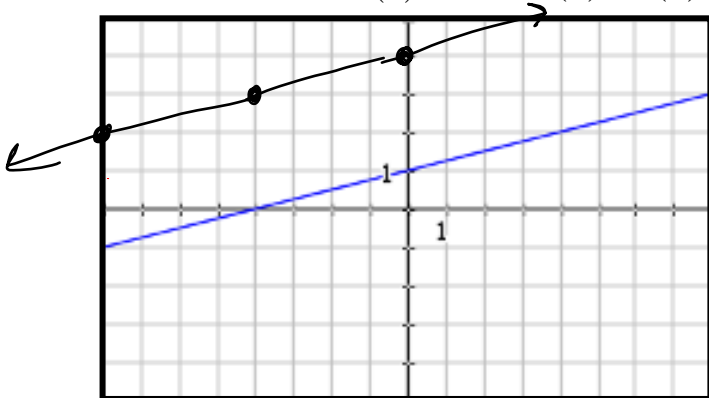
$g(x) =$



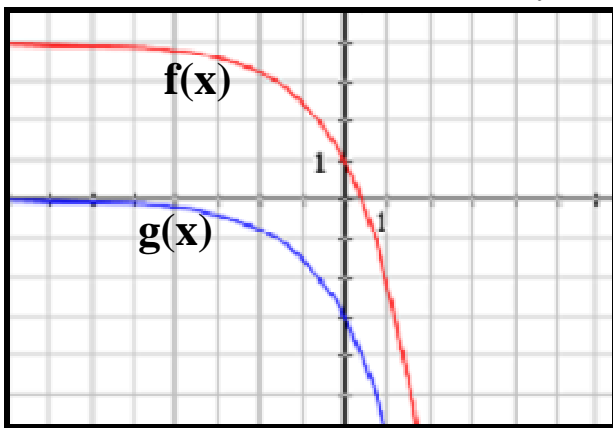
e. True or False: $f(-1) > g(3)$

f. True or False: $f(-2)$ is positive.

30. Given the graph of $f(x)$, create $g(x) = f(x) + 3$.



31. Describe the transformation that occurs from $f(x)$ to $g(x)$ in function notation.



$$g(x) = f(x) - 4$$

32. The table below shows the study times and test scores for a number of students.

| | | | | | | | | |
|-----------------------|----|----|----|----|----|----|----|----|
| Study Time in minutes | 27 | 22 | 38 | 24 | 12 | 42 | 15 | 34 |
| Test Score | 70 | 65 | 77 | 70 | 58 | 73 | 64 | 71 |

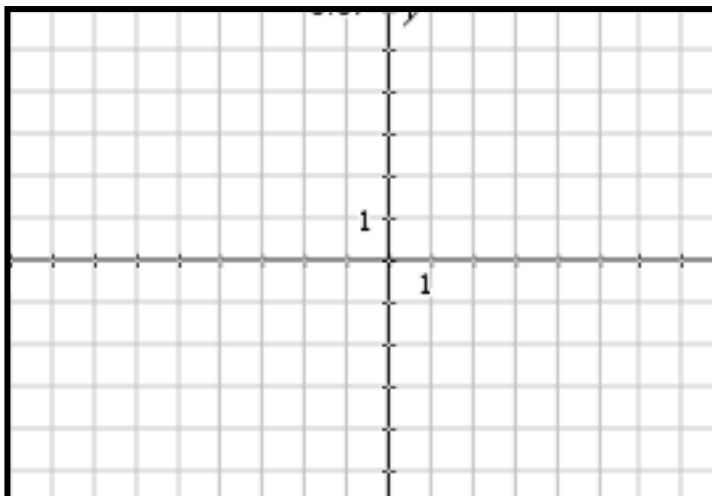
- a) Find the line of best fit. $y = 0.51x + 54.98$
- b) Write a sentence describing the slope. Students test scores .51% every minute they studied
- c) Find the correlation coefficient. 0.91 What does this value show about the data?
The data has a strong positive correlation
- d) If a student studies for an hour, what should her score be? $\approx 85\%$
- e) If a student doesn't study at all, what should his score be? $\approx 55\%$

33. Using a graph, find the solution(s) to the following system of equations:

$$y = 3^{x-1}$$

$$y = 2x + 4$$

$$(3.12, 10.2)$$



34. Jeff and his friends are planning a trip to a paintball park. Find the cost of lunch and the cost of each paintball. What would be the cost for 400 paintballs and lunch?

Paintball in the park:

- \$25 for 500 paintballs
- \$16 for 200 paintballs
- Lunch is included!

$$25 = 500p + l$$

$$16 = 200p + l$$

$$p = \$0.03 \text{ and } l = \$10$$

where p is the cost of paintballs and l is the cost of lunch

400 paintballs and lunch costs \$22.

35. A total of \$25,000 is invested in two funds paying 8% and 8.5% simple interest. If the yearly interest earned is \$2060, how much of the \$25,000 is invested at the 8% rate?

$$25000 = x + y$$

$$2060 = .08x + .085y$$

\$13,000 is invested at the 8% rate.

36. You find that you have a clogged drain and need to have a plumber come out to fix it. You check with two different companies and find that Perfect Plumbing charges \$50 for a visit, plus \$10 per hour. Drain Demons charges \$25 for a visit, plus \$20 per hour.

$$PP = 10x + 50$$

$$DD = 20x + 25$$

a. After how many hours would it not matter which company you chose?

2.5 hours

b. If you estimate that it will take 2 hours to fix, which company should you go with?

Drain Demons

37. Given the inequality $y > -2x + 1$ and $y \leq x + 3$, the point $(-2, 1)$ is _____. Explain your answer.

a. A solution to both inequalities, _____

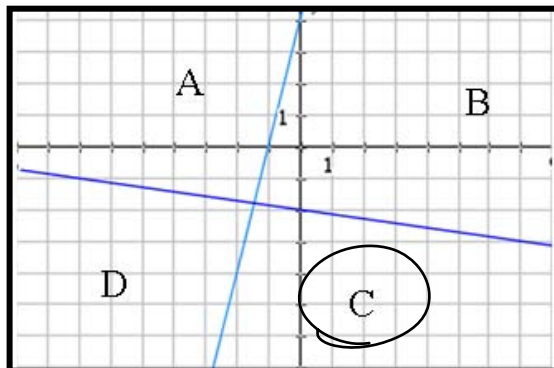
b. A solution to $y > -2x + 1$ only, The point is on the dotted line (not included)

c. A solution to $y \leq x + 3$ only, The point is in the shaded area.

d. Not a solution of either inequalities, _____

38. Which region (A, B, C, or D) would be shaded to represent the correct solution to the system of linear inequalities

$$\begin{cases} 7y + x \leq -14 \\ 4x - y \leq -4 \end{cases}$$



39. To apply for a scholarship, you must have a minimum of 20 hours of community service and a grade-point average of at least 3.75. Another scholarship requires at least 40 hours of community service and a minimum grade-point average of 3.0.

a. Write a system of inequalities to represent the credentials you must have to apply for both scholarships.

b. Graph the system of inequalities.

Let $x = \text{community service hours}$

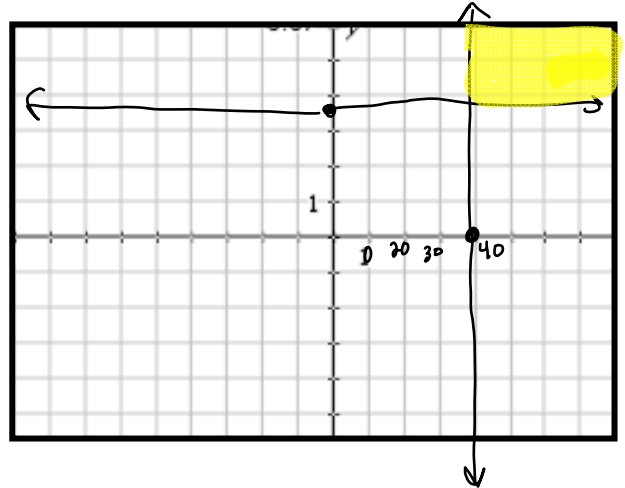
$y = \text{gpa}$

$$x \geq 20$$

$$y \geq 3.75$$

$$x \geq 40$$

$$y \geq 3.0$$



c. If you are eligible for both scholarships, give one possible solution. *Answers vary.*

40. Angela asked 100 adults which type of music they enjoyed. They could choose Jazz, Rock, Classical or Folk music. The two-way table shows some information about their answers.

| | Jazz | Rock | Classical | Folk | Total |
|-------|------|------|-----------|------|-------|
| Men | 12 | 17 | 19 | 4 | 52 |
| Women | 9 | 23 | 9 | 7 | 48 |
| Total | 21 | 40 | 28 | 11 | 100 |

a. Complete the two-way table.

b. How many did not choose Classical music? *72 people did not choose Classical music.*

41. A soda company conducted a taste test for three different kinds of soda that it makes. It surveyed 200 people in each age group about their favorite flavor and the results are shown in the table below.

| Age | Soda A | Soda B | Soda C |
|-------------|--------|--------|--------|
| Under 20 | 30 | 44 | 126 |
| 20 to 39 | 67 | 75 | 58 |
| 40 to 59 | 88 | 78 | 34 |
| 60 and over | 141 | 49 | 10 |

a. How many people in all were surveyed for the taste test? *$200 \times 4 = 800$ people*

b. How many participants chose Soda A? *326 people*

c. How many participants chose Soda C who were also 20 years or older? *102 people*

42. An airline wants to determine if passengers not checking luggage is related to people being on business trips. Data for 1000 random passengers at an airport was collected and summarized in the table below.

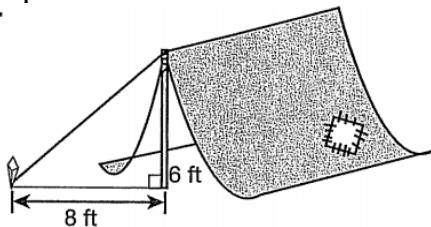
| | Checked Baggage | No Checked Baggage |
|----------------------------|--------------------|-----------------------|
| Traveling for business | 103 | 387 |
| Not traveling for business | 216 | 294 |

- How many passengers travelled for business? *490 passengers*
- How many passengers traveling did not check baggage? *681 passengers*
- Of the passengers traveling for business, how many did not check baggage? *387 passengers*

43. If a right triangle has legs of 4in and 5in, use the Pythagorean Theorem to find the length of the hypotenuse.

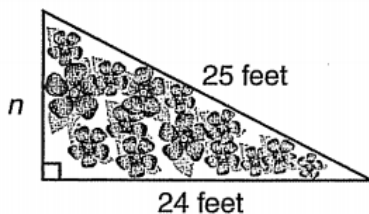
$$\sqrt{41} \text{ inches}$$

44. A tent is supported by a guy rope tied to a stake, as shown in the diagram. What is the length of the rope?



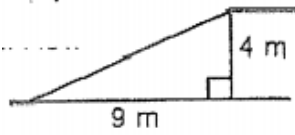
$$10 \text{ feet}$$

45. Julie is planning a right triangular garden. She marked two sides that measure 24 feet and 25 feet. What is the length of side labelled n ?



$$7 \text{ feet}$$

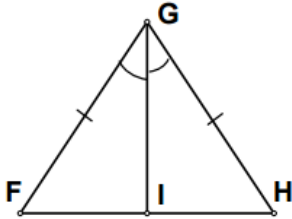
46. An inclined ramp rises 4 meters over a horizontal distance of 9 meters. How long is the ramp?



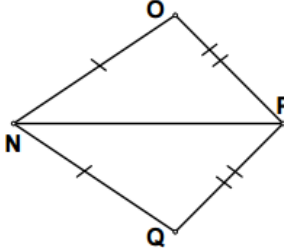
97 meters

47. In each of the figures below, write a congruence statement for the figures AND the postulate that proves that the triangles are congruent.

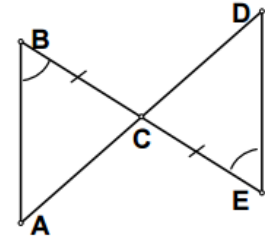
*congruence statements may vary.



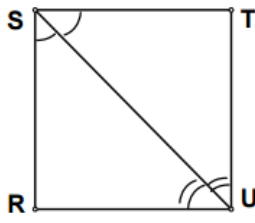
a. $\triangle FGI \cong \triangle HGI$
by SAS



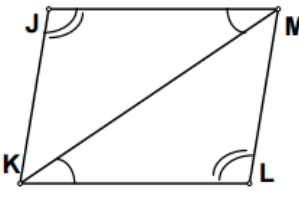
b. $\triangle NOP \cong \triangle NQP$
by SSS



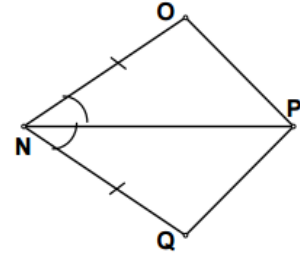
c. $\triangle ABC \cong \triangle DEC$
by ASA



d. $\triangle SRU \cong \triangle STU$
by ASA

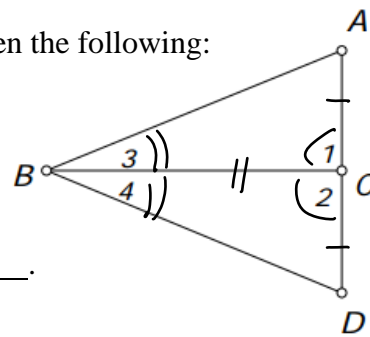


e. $\triangle JKM \cong \triangle JML$
by AAS



f. $\triangle ONP \cong \triangle QNP$
by SAS

48. Use the following diagram to make conjectures when given the following:



a. If $BC \perp AD$, then $\angle 1 + \angle 2$ are right and $\angle 1 \cong \angle 2$.

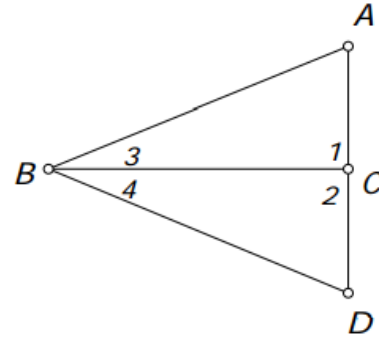
b. If \overline{BC} bisects $\angle ABD$, then $\angle 3 \cong \angle 4$.

c. If C is the midpoint of \overline{AD} , then $\overline{AC} \cong \overline{DC}$.

$\triangle ABC \cong \triangle DBC$
by ASA or SAS

49. Given the information stated in each exercise, you are to prove $\triangle ABC \cong \triangle DBC$. Without doing the proof, state the method you would use to prove them congruent. (SSS, SAS, ASA).

- a. Given: $AB = BD$; $AC = CD$ SSS
- b. Given: $\angle ABC \cong \angle DBC$; $AB = BD$ SAS
- c. Given: $\angle 1$ & $\angle 2$ are right angles; $\angle 3 \cong \angle 4$ ASA



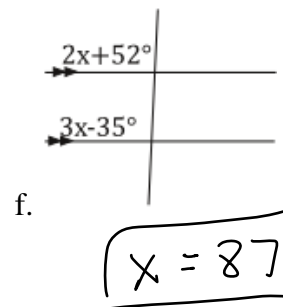
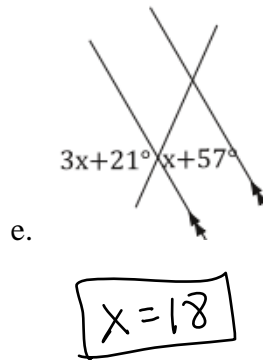
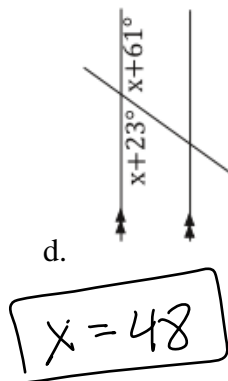
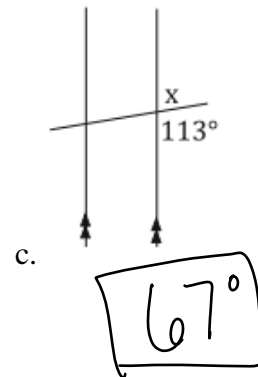
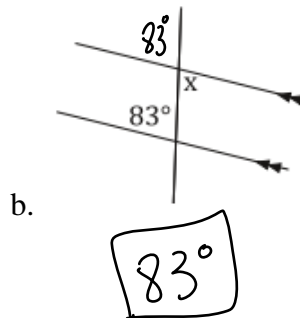
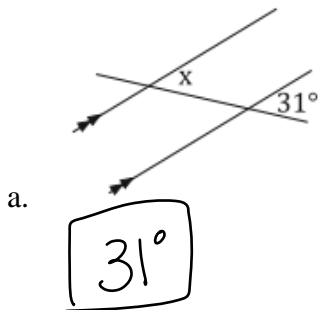
50. In a triangle, one angle measures 46° while another measures 108° . What is the measure of the remaining angle?

26°

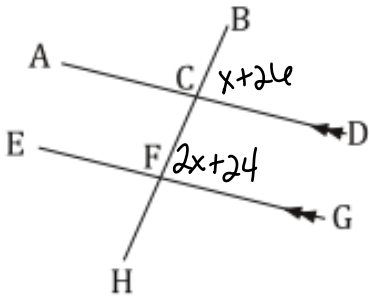
51. Is it possible for a triangle to have angle measures of 1° , 2° , and 177° ? Explain why or why not.

Yes because $1+2+177=180^\circ$

52. Solve for x in each figure below:



53. In the following diagram, $m\angle BCD = (x+26)^\circ$ and $m\angle BFG = (2x+24)^\circ$. Find $m\angle BFG$.



$$x=2$$

$$m\angle BFG = 28^\circ$$

54. Find the equations of the linear function that is perpendicular to $f(x) = \frac{2}{3}x + 5$ and passing through the point $(3,2)$. $\perp m = -\frac{3}{2}$

$$y = -\frac{3}{2}x + \frac{13}{2}$$

55. Find the equations of the linear function that is parallel to $2x - 3y = 6$ and passing through the point $(0,3)$.

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

56. Find the equations of the linear function that is perpendicular to $f(x) = -7$ and passing through the point $(-2,5)$.

$$x = -2$$

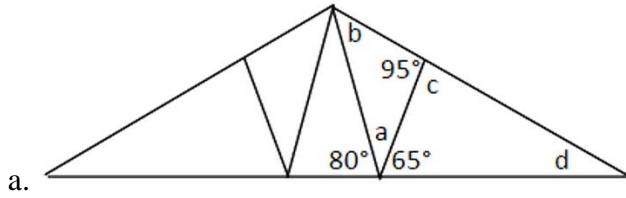
57. Find the equations of the perpendicular bisector through the segment with endpoints $(-10,-1)$ and $(5,9)$. midpoint $(-\frac{5}{2}, 4)$ slope = $-\frac{3}{2}$

$$y = -\frac{3}{2}x + \frac{1}{4}$$

OR

$$6x + 4y = 1$$

58. Use what know about the sum of the angles in a triangle together with the properties of supplementary angles to calculate the missing angles in the figure below.



$$a = 35^\circ$$

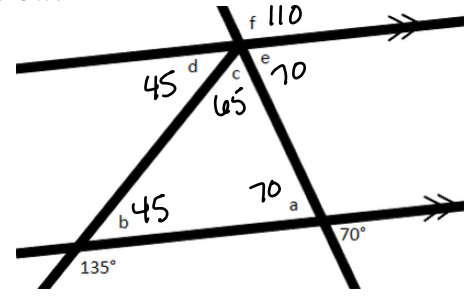
$$b = 50^\circ$$

$$c = 85^\circ$$

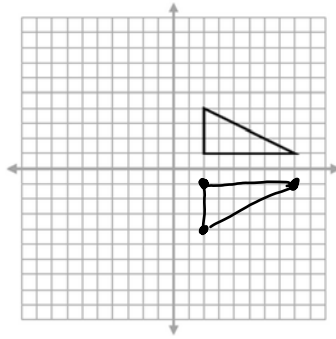
$$d = 30^\circ$$

59. Use what know about the sum of the angles in a triangle together with the properties of supplementary angles to calculate the SUM of angles b, c, and e in the figures below.

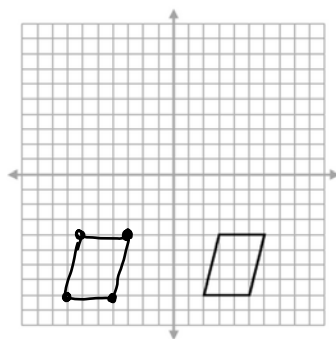
$$180^\circ$$



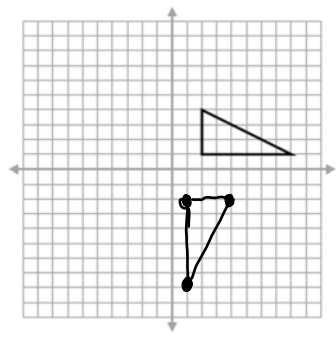
60. Draw a reflection of the figure shown over the x-axis.



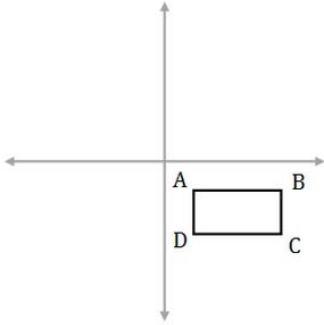
61. Draw a reflection of the figure shown over the y-axis.



62. Draw a rotation of 90 degrees clockwise about the origin of the figure shown.

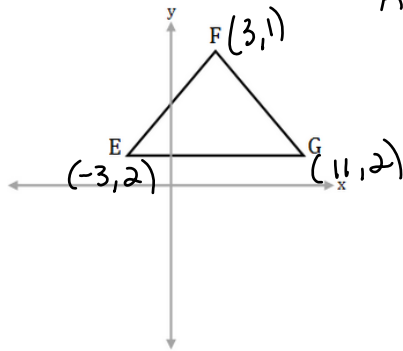


63. The coordinates of rectangle ABCD are $(2, -2)$ $(8, -2)$ $(8, -5)$ $(2, -5)$. What are the coordinates of rectangle A'B'C'D' after a translation of $(-6, 7)$.



$$\begin{aligned} A' & (-4, 5) \\ B' & (2, 5) \\ C' & (2, 2) \\ D' & (-4, 2) \end{aligned}$$

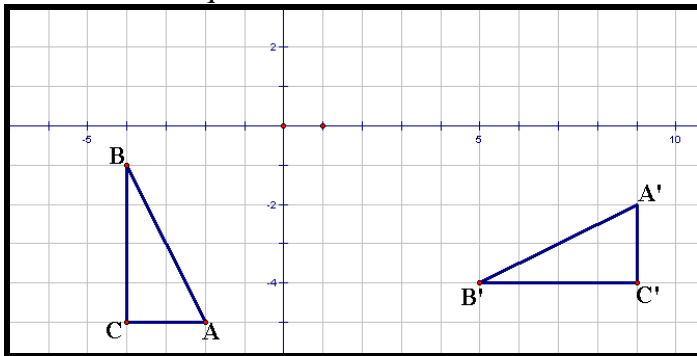
64. The coordinates of $\triangle EFG$ are $(-3, 2)$ $(3, 11)$ $(11, 2)$. What are the coordinates of rectangle $\triangle E'F'G'$ after a horizontal reflection?



A horizontal reflection means to reflect across the y -axis.

$$\triangle E'F'G' - (-3, 2), (-3, 11), (-11, 2)$$

65. Describe the sequence of transformations from ABC to A'B'C'.



rotate about origin 90°
and translate $(4, 0)$

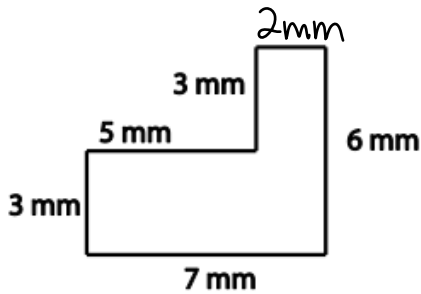
66. Find the perimeter of a square with each side measuring 9 meters.

$$\text{Perimeter} = 36 \text{ meters}$$

67. Find the length of one side of a square whose perimeter is 52 feet.

$$\text{The sides are } 13 \text{ feet.}$$

68. Find the length of the missing side of the shape below.



69. A yoga mat is rectangular and measures 72 inches by 24 inches. Find the area of the mat.

$$\text{Area} = 1,728 \text{ in}^2$$

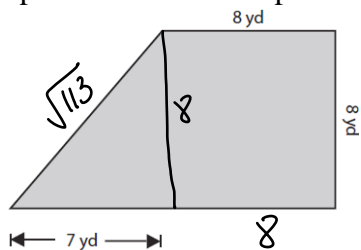
70. Maddison calculates the area of a rectangle to be 56 meters. What is wrong with her answer?

Her answer is not squared.

71. The perimeter of a rectangle is 66. The length is twice the width. Find the length and width of the rectangle.

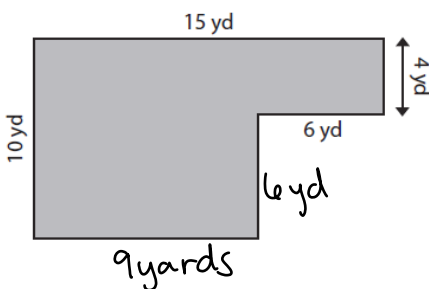
$$\begin{aligned} \text{length} &= 22 \text{ units} \\ \text{width} &= 11 \text{ units} \end{aligned}$$

72. Find the perimeter of the shape shown below.



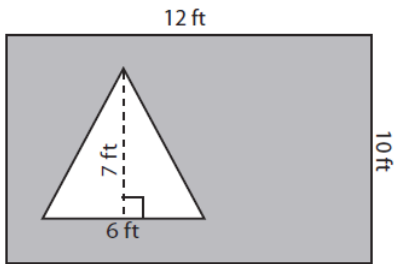
$$\begin{aligned} &8 + 8 + 8 + 7 + \sqrt{113} \\ &= 31 + \sqrt{113} \text{ yards} \end{aligned}$$

73. Find the perimeter of the shape shown below.



$$50 \text{ yards}$$

74. Find the area of the shaded region.

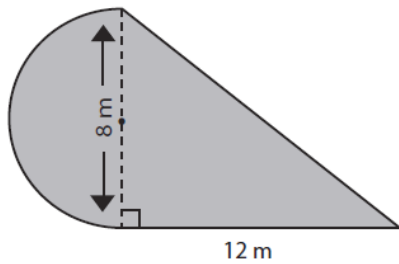


Square - Triangle

$$120 - 21$$

$$\boxed{99 \text{ ft}^2}$$

75. Find the area of the shape shown below.

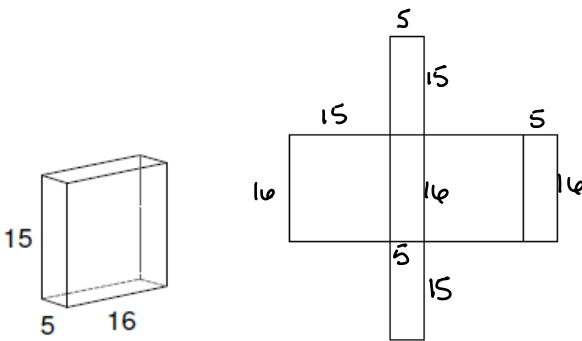


Semi circle + triangle

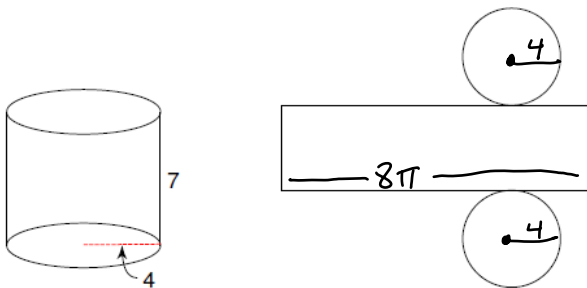
$$\frac{1}{2}(\pi 4^2) + \frac{1}{2}(12)(8)$$

$$\boxed{8\pi + 48 \text{ m}^2}$$

76. Copy the measurements given onto the net of the solid.

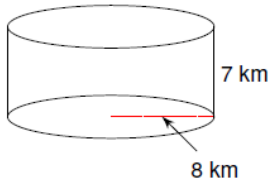


77. Copy the measurements given onto the net of the solid.



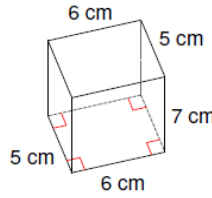
$$C = 2\pi r = 8\pi$$

78. Find the volume of each figure shown below: $V = (\text{area of base})(\text{height})$



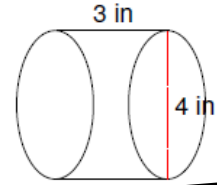
a.

$$V = 448\pi \text{ km}^3$$



b.

$$V = 210 \text{ cm}^3$$



c.

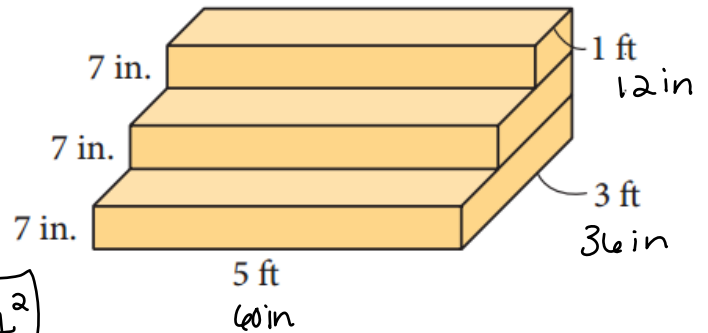
$$V = 12\pi \text{ in}^3$$

79. This set of stairs is positioned on a garage floor, against a wall.

a. The stairs are to be painted. Find the area that needs to be painted.

Front of Stairs + Top of Stairs + sides =

$$4,428 \text{ in}^2 \text{ OR } 30.75 \text{ ft}^2$$



b. If 1L of paint covers 11.2 ft^2 , how many liters of paint are needed to paint the stairs?

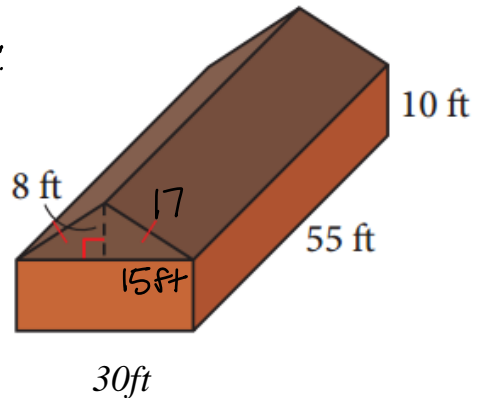
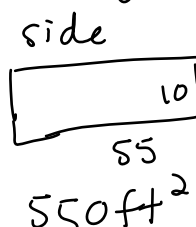
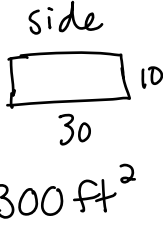
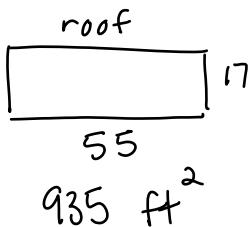
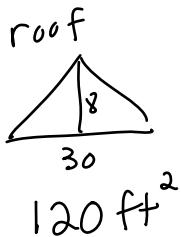
$$11.2 \text{ ft}^2 = 1,612.8 \text{ in}^2$$

$$\frac{4,428}{1,612.8} \approx 2.75 \quad \text{OR} \quad \frac{30.75}{11.2} \approx 2.75$$

3 Liters of paint

80. The exterior walls of a barn are to be painted. The barn is in the shape of a rectangular prism with an isosceles triangular prism for a roof.

a. Find the total area to be painted. 2 of each figure:



$$\text{Total area: } 3,810 \text{ ft}^2$$

b. The paint is sold in 1 gallon cans. On the first coat of paint, a gallon of paint will cover an area of 400 ft^2 . How many gallons of paint are needed for the first coat?

$$\frac{3,810}{400} = 9.525$$

10 gallons of paint