

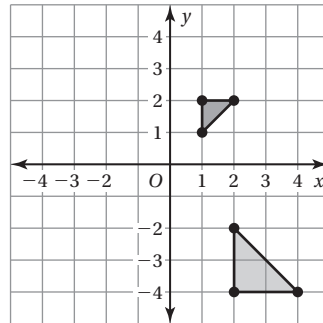
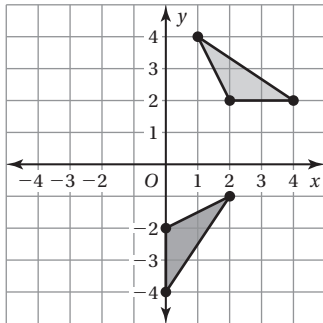
Mathematics 8 Summer Assignment

Instructions: Please print this summer packet and complete it neatly using a pencil. You must show ALL WORK, either on the packet, or on separate paper attached to the packet. Please bring your completed summer assignment the first day of school. This assignment will be collected on the very first day and serve as one of the first grades of the marking period. Points will be taken off for lateness, or for students who do not show their work!

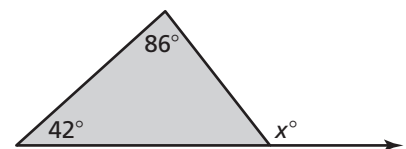
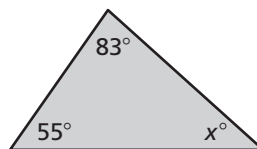
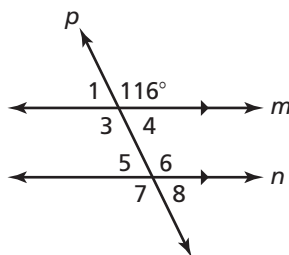
**Grade
8**

Pre-Course Test

- Solve $-5x - 3x - 1 = -17$.
- Solve $-4(7.5x - 8) = -5(6.3x + 8)$.
- How many solutions does the equation $-\frac{1}{3}(9x - 12) = 4 - 3x$ have?
- The vertices of a triangle are $A(-2, 0)$, $B(1, 2)$, and $C(-1, -1)$. Translate the triangle 1 unit left and 2 units up. What are the coordinates of the image?
- The vertices of a triangle are $A(-2, 1)$, $B(2, 4)$, and $C(2, 2)$. Reflect the triangle in the x -axis. What are the coordinates of the image?
- The vertices of a triangle are $A(-4, -1)$, $B(3, -2)$, and $C(-2, -4)$. Rotate the triangle 180° about the origin. What are the coordinates of the image?
- $\triangle MNP$ is the image of $\triangle JKL$ after a translation 5 units up. $\triangle JKL$ is scalene.
 - Is the measure of $\angle K$ equal to the measure of $\angle P$?
 - Is the length of side LJ equal to the length of side PM ?
- Line g and line m are parallel. Both lines are translated 2 units left. Are the images of the lines parallel?
- You translate a line 3 units right. Is the image of the line still a line?
- The vertices of a triangle are $A(0, 1)$, $B(0, -1)$, and $C(1, 2)$. Dilate the triangle using a scale factor of 3. What are the coordinates of the image?
- Describe a sequence of rigid motions between the triangles.
- Describe a similarity transformation between the triangles.



- Find the measures of the numbered angles.
- Find the values of x .
- Find the values of x .



Grade 8

Pre-Course Test (continued)

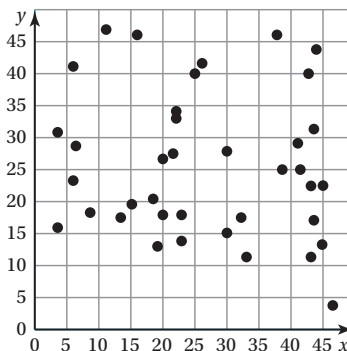
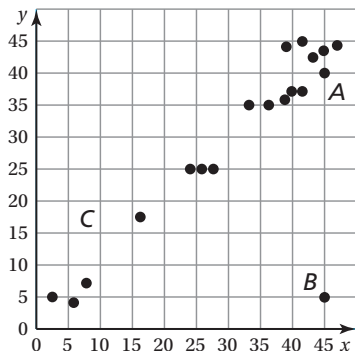
16. Triangle A has interior angle measures of 84° , x° , and 43° . Triangle B has interior angle measures of 84° , 50° , and y° . Are the triangles similar?
17. The profit y (in dollars) for a business from selling x coats is represented by $y = 41x$. Graph the equation.
18. The distance y (in miles) that Train A travels in x hours is represented by the equation $y = 62x$. The distance that Train B travels is represented by a graph of a line through the points $(0, 0)$ and $(1, 64)$. Which train is faster?
19. Solve the system by graphing. 20. Solve the system algebraically.

$$\begin{aligned} 5x + y &= 5 \\ x - y &= 1 \end{aligned}$$

$$\begin{aligned} 9x - 2y &= 10 \\ 3x - y &= 2 \end{aligned}$$

21. You buy 5 small candles and 3 large candles for \$23. Your friend buys 4 small candles and 1 large candle for \$10. How much does each item cost?
22. Determine the number of solutions of the system.
- $$\begin{aligned} y &= -2x + 5 \\ 6x + 3y &= 15 \end{aligned}$$

23. Identify any outliers, gaps, or clusters. 24. Describe the relationship between the data in the scatter plot.



25. Make a scatter plot of the data and draw a line of fit. Write an equation of the line of fit.

x	15	5	30	10	30	20	15	25	30	15
y	15	25	0	25	5	10	20	5	10	25

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Pre-Course Test (continued)

26. You collect data about the number of absences in a school year x and the final exam scores y for several students. An equation of a line of fit for the data is $y = -4x + 95$. Interpret the slope and y -intercept.
27. You randomly survey middle school students and high school students about whether they prefer juice or milk. The results are shown in the tables. Create a two-way table that includes the marginal frequencies.

Middle School	
Juice	Milk
61	74

High School	
Juice	Milk
45	58

28. Do the ordered pairs $(5, 20)$, $(5, 16)$, $(8, 20)$, $(8, 14)$, $(10, 16)$, $(11, 14)$, and $(11, 2)$ represent the graph of a function?
29. Graph the function $y = -\frac{4}{5}x - 2$.
30. Two arcades charge an entrance fee and a fee per game. At Arcade A, the total cost y (in dollars) of playing x games is represented by the linear function $y = 0.75x + 6$. The table shows the total cost for playing x games at Arcade B. Which arcade has a higher fee per game? a higher entrance fee?

Number of Games, x	0	4	8	12
Total Cost, y	7	8	9	10

31. Determine whether each equation represents a linear function.
- a. $y = 5x - 7$ b. $y = -\frac{1}{x}$ c. $y = -\frac{5}{x^2}$ d. $y = -\frac{3}{x}$
32. Create a graph for each situation. (a) The temperature increases slowly at first and then more quickly. (b) The temperature stays constant.

Simplify the expression. Write your answer as a power.

33. $x^3 \cdot x^8$ 34. $(x^3)^5$ 35. $(xy)^7$ 36. $\frac{(-2)^8}{(-2)^5}$

37. Evaluate the expression 5^{-2} .
38. The population of Country A is about 10,573,000 and the population of Country B is about 1,020,000,000. Approximately how many times greater is the population of Country B than the population of Country A?
39. Write the number 0.0000000834 in scientific notation.

**Grade
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40. A calculator display shows $9.2E11$. Write the number in standard form.

Evaluate the expression. Write your answer in scientific notation.

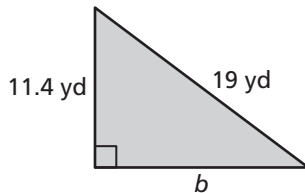
41. $(8.4 \times 10^5) + (1.5 \times 10^5)$

42. $(9 \times 10^{-2}) \times (9 \times 10^{-3})$

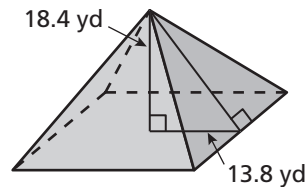
43. Evaluate $\sqrt{\frac{16}{9}}$.

44. Solve $6x^2 - 96 = 54$.

45. Find b .



46. Find the slant height.



47. Your friend's house is 4.8 miles south and 9 miles east of your school. How far is your friend's house from your school?

48. Evaluate $\sqrt[3]{\frac{343}{729}}$.

49. Solve $\frac{1}{9}x^3 = 24$.

50. Write each number as a mixed number.

a. 1.5

b. 1.63

c. $1.\bar{5}$

51. Write $0.\overline{94}$ as a fraction in simplest form.

52. Approximate $\sqrt{2}$ to the nearest tenth. Plot the number on a number line.

53. Which number is greater, $\sqrt{15}$ or $\sqrt[3]{66}$?

54. Approximate the distance between $(0, -6)$ and $(6, -2)$ to the nearest tenth.

55. Tell whether a triangle with the side lengths 45 centimeters, 58 centimeters, and 66 centimeters is a right triangle.

56. The volume of a cylindrical container is 113 cubic inches, and the height is 9 inches. Approximate the radius of the container to the nearest whole number.

57. A cone has a diameter of 10 meters and a height of 15 meters. Approximate the volume of the cone to the nearest tenth.

58. The volume of a spherical ball is 7776π cubic centimeters. Find the radius of the ball.