

# Geometry NYC Review

Name: \_\_\_\_\_

$$\text{Slope} = \frac{\Delta y}{\Delta x}$$

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\text{Midpoint} = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

**Find the slope, distance, and midpoint between the two given points.  
Round answers to the tenths and simplify the slope, if possible.**

	Points	Slope	Distance	Midpoint
1.	(2, 4) (6, 11)			
2.	(-2, 3) (6, 10)			
3.	(2, 7) (7, 19)			
4.	(1, 4) (12, 1)			
5.	(-4, 4) (-6, -1)			
6.	(-8, -2) (6, 11)			
7.	(-4, 8) (4, -2)			
8.	(0, -8) (-6, 8)			

- \_\_\_\_\_ 9. Point A is at (3, 7) and B is at (7, 1). If B is the midpoint of  $\overline{AC}$ , what are the coordinates of C?
- \_\_\_\_\_ 10. Point A is at (-4, 8) and B is at (-2, 12). If B is the midpoint of  $\overline{AC}$ , what are the coordinates of C?
- \_\_\_\_\_ 11. Point X is at (2, 12) and D is at (8, 10). If D is the midpoint of  $\overline{XP}$ , what are the coordinates of P?
- \_\_\_\_\_ 12. Point A is at (6, 1) and T is at (8, 10). If X is the midpoint of  $\overline{AT}$ , what are the coordinates of X?
- \_\_\_\_\_ 13. Point A is at (2, 12) and B is at (18, 10). If C is the midpoint of  $\overline{AB}$ , what are the coordinates of C?

Figure 1

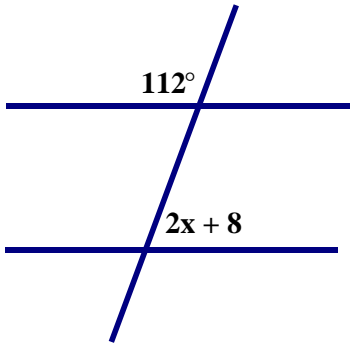


Figure 2

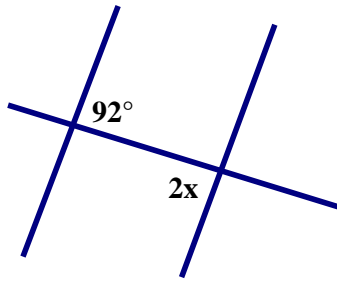


Figure 3

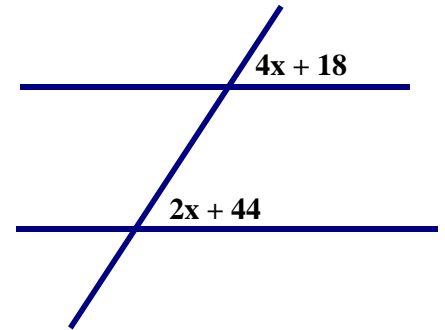


Figure 4

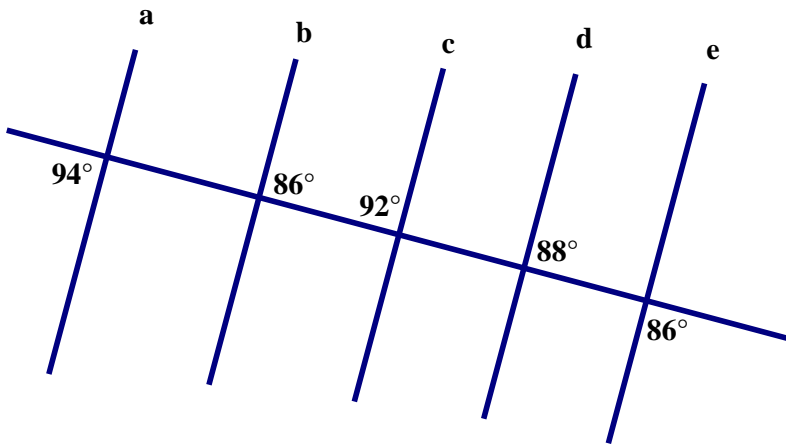
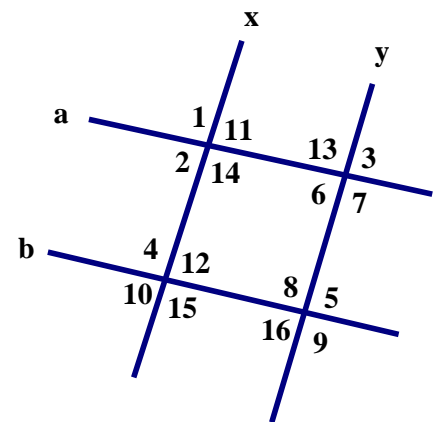


Figure 5



\_\_\_\_\_ 14. What must  $x$  be in Figure 1 above to make the two lines parallel?

\_\_\_\_\_ 15. What must  $x$  be in Figure 2 above to make the two lines parallel?

\_\_\_\_\_ 16. What must  $x$  be in Figure 3 above to make the two lines parallel?

17. Circle all statements below that are true about the lines in Figure 4.

$a \parallel b$     $a \parallel c$     $a \parallel d$     $a \parallel e$     $b \parallel c$     $b \parallel d$     $b \parallel e$     $c \parallel d$     $c \parallel e$     $d \parallel e$

18. Circle all statements below that would prove that  $x \parallel y$  in figure 5.

$\angle 12 = \angle 9$     $\angle 14 = \angle 8$     $\angle 2 = \angle 6$     $\angle 1 = \angle 7$     $\angle 15 = \angle 9$     $\angle 4 = \angle 5$

$\angle 12$  is supplementary to  $\angle 8$     $\angle 12$  is supplementary to  $\angle 14$     $\angle 11$  is supplementary to  $\angle 13$

19. Circle all statements below that would prove that  $a \parallel b$  in figure 5.

$\angle 1 = \angle 4$     $\angle 14 = \angle 4$     $\angle 3 = \angle 6$     $\angle 1 = \angle 6$     $\angle 13 = \angle 4$     $\angle 16 = \angle 6$

$\angle 2$  is supplementary to  $\angle 4$     $\angle 15$  is supplementary to  $\angle 16$     $\angle 5$  is supplementary to  $\angle 7$

Figure 6

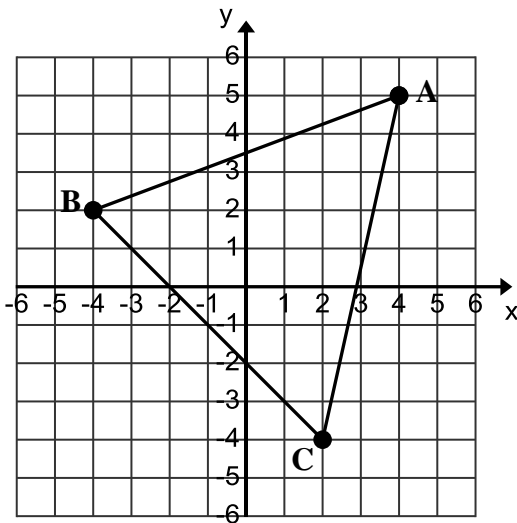
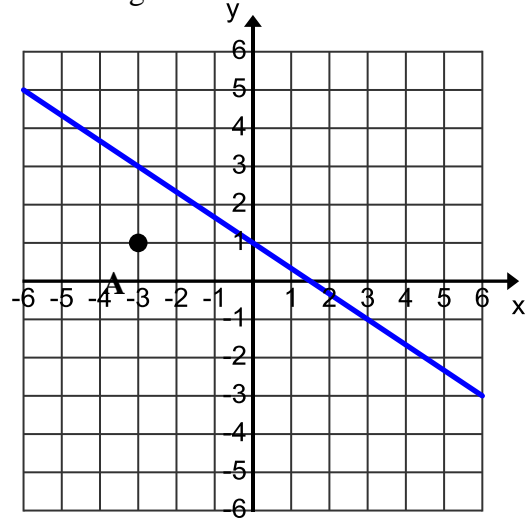


Figure 7



Calculate the following for Figure 6 above. Simplify all fractions and round distances to nearest tenth.

		Slope	Distance	Midpoint
20.	$\overline{AB}$			
21.	$\overline{AC}$			
22.	$\overline{BC}$			

\_\_\_\_\_ 23. Name the two other integral points on Figure 7 that go through point A and form a line that is perpendicular to the line.

\_\_\_\_\_ 24.  $\overline{AB}$  contains the points A (2, 5) and B (4, 10).  
Which are the coordinates of a line that is parallel to  $\overline{AB}$  ?  
A. (3, 4) and (1, 9)                      B. (4, 4) and (-1, 6)  
C. (7, 1) and (2, -1)                      D. (1, 1) and (3, 6)

\_\_\_\_\_ 25.  $\overline{CX}$  contains the points C (4, 4) and X (-1, 6).  
Which are the coordinates of a line that is perpendicular to  $\overline{CX}$  ?  
A. (3, 4) and (1, -1)                      B. (3, 4) and (1, 9)  
C. (7, 1) and (2, -1)                      D. (0, 3) and (4, 10)

\_\_\_\_\_ 26. The diagonals of a square measure 12 cm. What are the side lengths of the square?  
A.  $24\sqrt{2}$                       B.  $24\sqrt{3}$                       C.  $12\sqrt{2}$                       D.  $12\sqrt{3}$

\_\_\_\_\_ 27. Which set of side lengths would be a right triangle?  
A. 11, 19, 22                      B. 8, 12, 6                      C. 20, 15, 11                      D. 15, 17, 8

\_\_\_\_\_ 28. If A = (-4, 3) and B = (9, 10), what is AB? Round answer to the nearest tenth.

- \_\_\_\_\_ 29. On  $\overline{AC}$ , B is the midpoint with  $AB = 5n - 4$  and  $BC = 3n + 10$ .  
What is the numerical length of AB?
- \_\_\_\_\_ 30. If  $\angle A$  and  $\angle B$  are a linear pair with  $\angle A = n + 40$   
and  $\angle B = 9n + 20$ , what is the measurement of  $\angle B$ ?
- \_\_\_\_\_ 31. If X is the midpoint of  $\overline{AB}$  and  $AB = 8n + 6$ , what is XB?
- \_\_\_\_\_ 32. If you drive 33 miles due East and then drive 55 miles due North,  
how far from the starting point are you? Round answer to the nearest tenth.
- \_\_\_\_\_ 33.  $\overrightarrow{BX}$  bisects  $\angle ABC$ . If  $\angle ABX = 8n + 10$ , what is  $\angle ABC$ ?
- \_\_\_\_\_ 34. Let N be the midpoint of  $\overline{AD}$  with  $AD = 8n - 10$  and  $AN = 3n + 15$ . What is  $n$ ? (Tricky)
- \_\_\_\_\_ 35. If  $\angle 1$  and  $\angle 2$  are vertical angles with  $\angle 1 = n + 40$   
and  $\angle 2 = 3n + 20$ , what is the measurement of  $\angle 2$ ?
- \_\_\_\_\_ 36. If  $\angle 1$  and  $\angle 2$  are complementary angles with  $\angle 1 = n + 6$   
and  $\angle 2 = 8n - 6$ , what is the measurement of  $\angle 1$ ?
- \_\_\_\_\_ 37. Point A is at (2, 6) and B is at (4, 1). If B is the midpoint of  $\overline{AC}$ , what are the coordinates of C?
- \_\_\_\_\_ 38. "If you don't like cold weather, then you will love Florida" is represented by  $p \rightarrow q$ .  
What is the symbolic representation of "If you don't love Florida, you will like cold weather"?
- \_\_\_\_\_ 39. "If you like dogs, you like cats" is represented by  $p \rightarrow q$ . What would be  
the symbolic representation of "if you like cats, you don't like dogs"?
- \_\_\_\_\_ 40. Let p represent  $\sqrt{11} = z$ , and let q represent z is a rational number. What is a symbolic  
representation of the statement: "If  $\sqrt{11} = z$ , then z is not a rational number"?
- \_\_\_\_\_ 41. "If you have a laptop, then you have a computer" is represented by  $p \rightarrow q$ . What is the symbolic  
representation of "If you have a computer, then you don't have a laptop"?
- \_\_\_\_\_ 42. What is the contrapositive of  $\sim q \rightarrow p$ ?
- \_\_\_\_\_ 43. What is the inverse of  $p \rightarrow \sim q$ ?
44. If  $ab = c$ , then  $a = \frac{c}{b}$ . Give the converse, inverse and contrapositive to this statement.

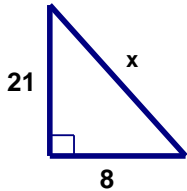
Converse: \_\_\_\_\_

Inverse: \_\_\_\_\_

Contrapositive: \_\_\_\_\_

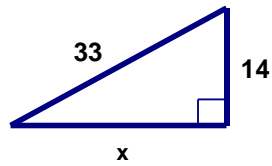
Find the value for  $x$  in the figures below. Round answers to the nearest tenth.

45.



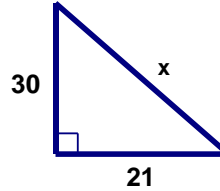
$x =$  \_\_\_\_\_

46.



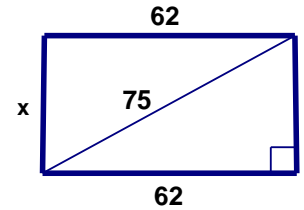
$x =$  \_\_\_\_\_

47.



$x =$  \_\_\_\_\_

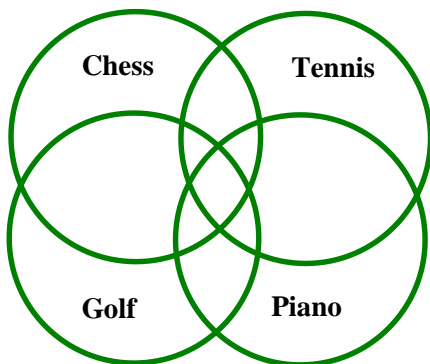
48.



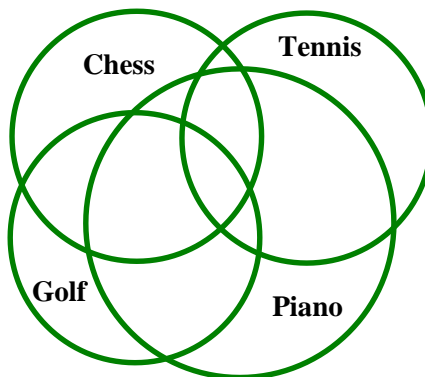
$x =$  \_\_\_\_\_

- \_\_\_\_\_ 49. Rounded to the nearest whole number, what is the circumference of a circle with a radius of 20 cm?
- \_\_\_\_\_ 50. Rounded to the nearest whole number, what is the area of a circle with a diameter of 12 cm?
- \_\_\_\_\_ 51. Rounded to the nearest whole number, what is the area of a circle with a circumference of 44 cm? Tricky!
- \_\_\_\_\_ 52. A right triangle has a hypotenuse of 53 cm and one leg that is 45 cm. What is the total perimeter of this right triangle?
- \_\_\_\_\_ 53. A dog is tied to pole with a rope that is 25 feet long. How much area does the dog have to run around in?

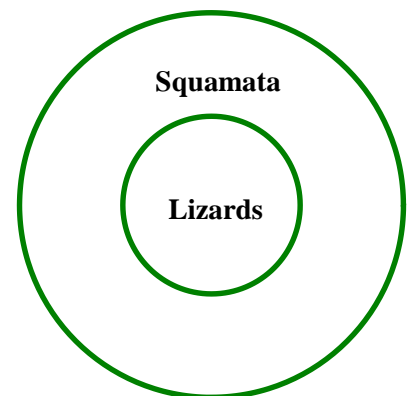
**Figure 8**



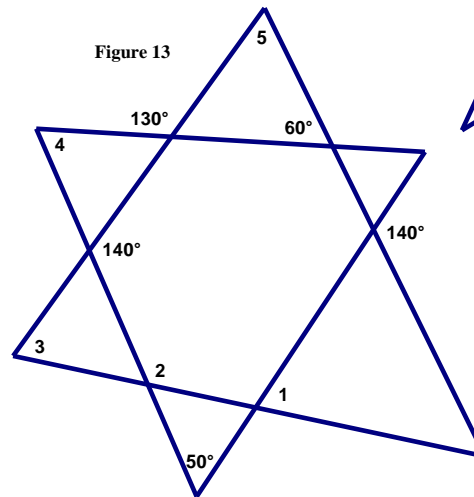
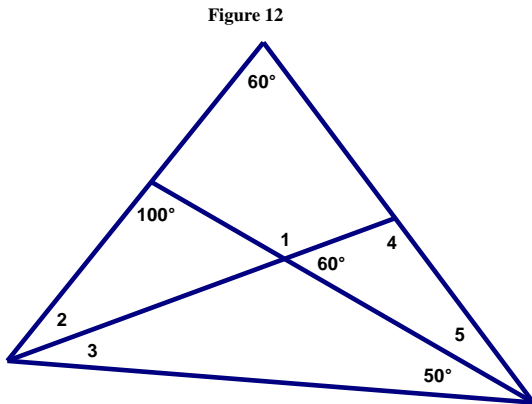
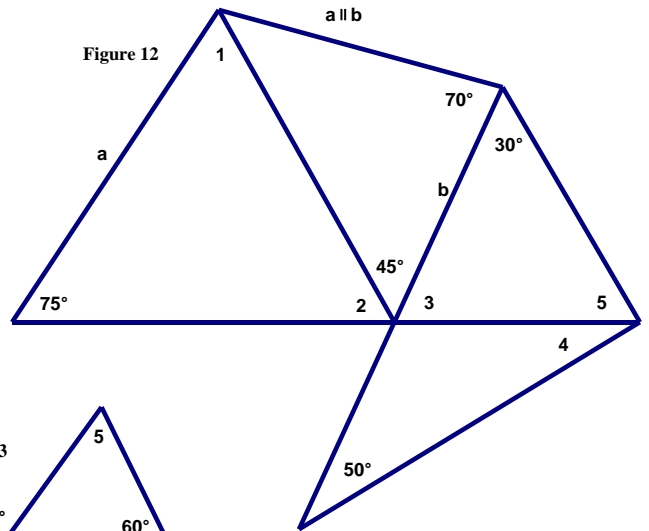
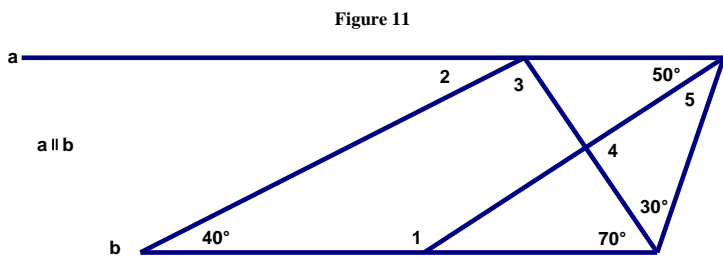
**Figure 9**



**Figure 10**



54. In figure 8 above, darken in the area that represents the kids who play piano and golf, but nothing else.
55. In figure 9 above, darken in the area that represents the kids who play chess and piano, but nothing else.
- \_\_\_\_\_ 56. Which of the following statements represents what is being said in Figure 10 above?
- A. All squamata are lizards.                      C. Some squamata are lizards.
- B. All lizards are squamata.                    D. Some lizards are squamata.



57. In figure 11 above, find the missing angles.

$\angle 1 = \underline{\hspace{1cm}}$   $\angle 2 = \underline{\hspace{1cm}}$   $\angle 3 = \underline{\hspace{1cm}}$   $\angle 4 = \underline{\hspace{1cm}}$   $\angle 5 = \underline{\hspace{1cm}}$

58. In figure 12 above, find the missing angles.

$\angle 1 = \underline{\hspace{1cm}}$   $\angle 2 = \underline{\hspace{1cm}}$   $\angle 3 = \underline{\hspace{1cm}}$   $\angle 4 = \underline{\hspace{1cm}}$   $\angle 5 = \underline{\hspace{1cm}}$

59. In figure 13 above, find the missing angles.

$\angle 1 = \underline{\hspace{1cm}}$   $\angle 2 = \underline{\hspace{1cm}}$   $\angle 3 = \underline{\hspace{1cm}}$   $\angle 4 = \underline{\hspace{1cm}}$   $\angle 5 = \underline{\hspace{1cm}}$

60. In figure 14 above, find the missing angles.

$\angle 1 = \underline{\hspace{1cm}}$   $\angle 2 = \underline{\hspace{1cm}}$   $\angle 3 = \underline{\hspace{1cm}}$   $\angle 4 = \underline{\hspace{1cm}}$   $\angle 5 = \underline{\hspace{1cm}}$