

End of Term 2 (Math) Grade 08

Modules 5, 6, and 7

Exam Style – Questions



Calculator is not allowed

Section I - MCQs

1. If $y = x - 3$ and the input is $x = 2$, then the output is ____ .

A. -5

B. -1

C. 1

D. 5

2. If $y = 4x + 1$ and the input is $x = -1$, then the output is ____ .

A. -5

B. -3

C. 0

D. 5

3. The initial value of the linear function for the table below is ____ .

A. 65

B. 35

C. 0

D. 20

x	y
0	20
1	35
2	50
3	65

4. The initial value of the linear function for the table below is ____ .

A. -2

B. 0

C. -6

D. 10

x	y
1	-2
2	2
3	6

5. Select the correct statement for the table below.

- A. Linear function. Rate of change = 1
- B. Linear function. Rate of change = 2
- C. Linear function. Rate of change = 5
- D. Not a linear function

x	y
1	1
2	4
3	9
4	16

6. Select the correct statement for the table below.

- A. Linear function. Rate of change = 3
- B. Linear function. Rate of change = 5
- C. Not a linear function
- D. Linear function. Rate of change = 2

x	y
1	2
2	5
3	10
4	17

7. Solving by substitution, the number of solutions for the system below is

$$\begin{cases} y = 5x - 1 \\ 2y = 10x - 2 \end{cases}$$

- A. 0 solution
- B. 1 solution
- C. 2 solutions
- D. Infinitely many solutions

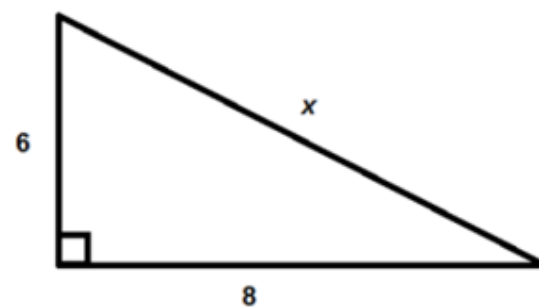
8. Solving by substitution, the number of solutions for the system below is:

$$\begin{cases} y = -3x + 4 \\ y = -3x - 2 \end{cases}$$

- A. 0 solution
- B. 1 solution
- C. 2 solutions
- D. Infinitely many solutions

9. The length of side x in the right triangle shown is _

- A. 14
- B. 13
- C. 10
- D. 36



10. The distance between the points $A(1,5)$ and $B(5,1)$ is ____ .

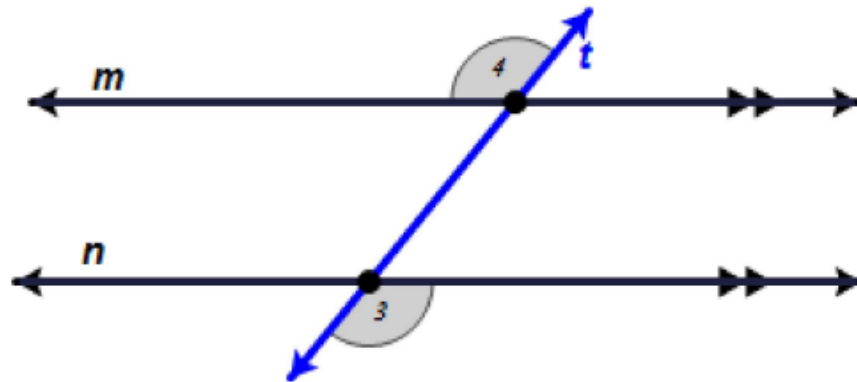
A. $\sqrt{16}$

B. $\sqrt{20}$

C. $\sqrt{32}$

D. $\sqrt{40}$

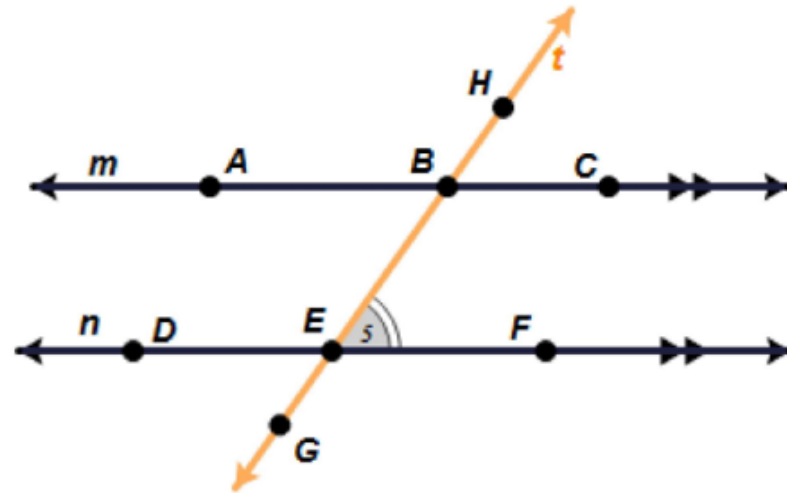
11. In the diagram line m is parallel to line n with a transversal line t .



Which of the below terms best describe the relationship between $\angle 3$ and $\angle 4$?

- A. Alternate Exterior Angles
- B. Alternate Interior Angles
- C. Corresponding Angles
- D. Vertical Angles

12. In the diagram line m is parallel to line n with a transversal line t .

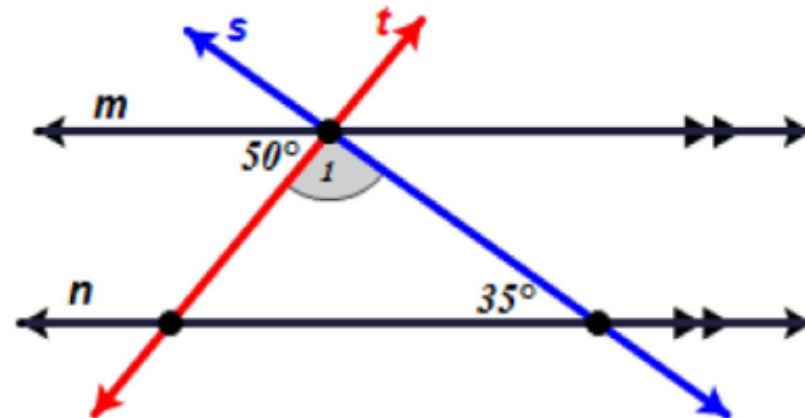


Which other angle would be the alternate interior angle to $\angle BEF$?

- A. $\angle DEG$
- B. $\angle EBC$
- C. $\angle ABE$
- D. $\angle CBH$

13. Use the diagram to determine the measure of angle $m\angle 1$.

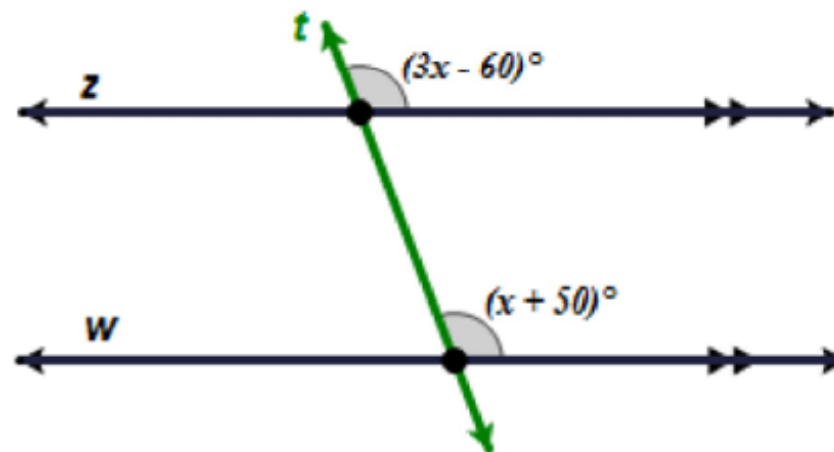
- A. 50°
- B. 85°
- C. 95°
- D. 100°



In the diagram line m is parallel to line n with a transversal line t and transversal line s .

14. Use the diagram to determine the measure of the value of x .

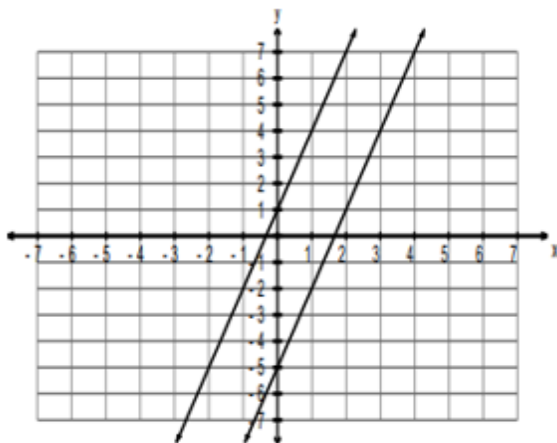
- A. $x = 42$
- B. $x = 47.5$
- C. $x = 55$
- D. $x = 60$



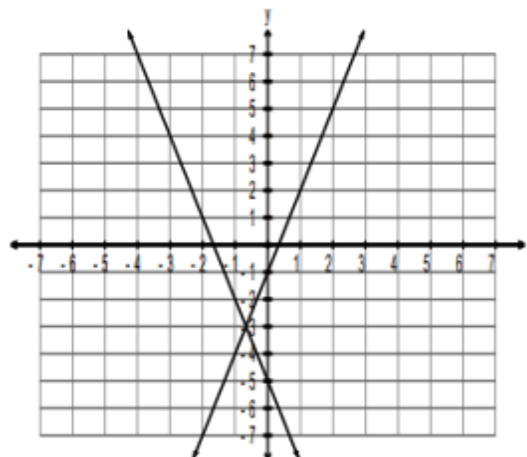
In the diagram line z is parallel to line w with a transversal line t .

15. Which graph represents the solution to the linear system $\begin{cases} y = -3x - 5 \\ 2y = 3x + 1 \end{cases}$

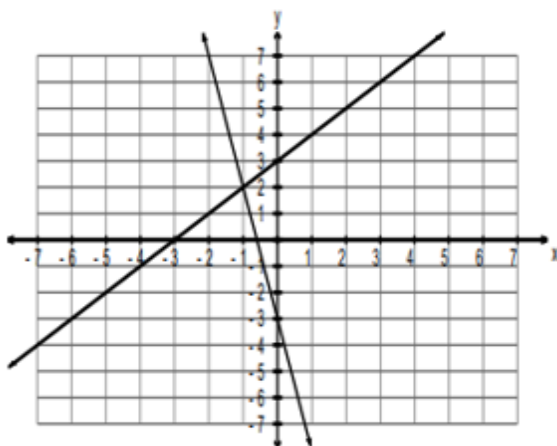
A.



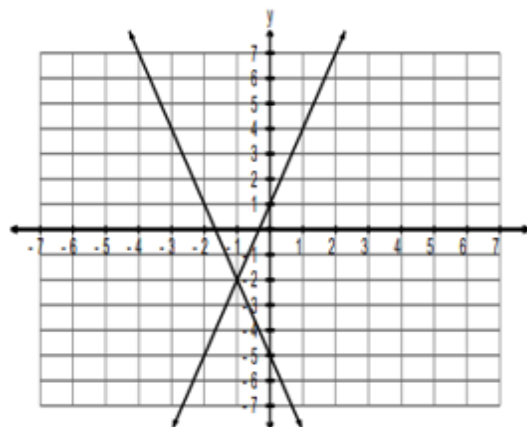
B.



C.



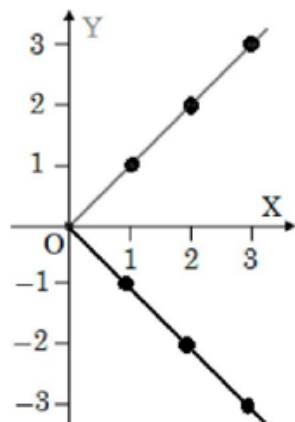
D.



Section II

16. Answer the below questions (a-b)

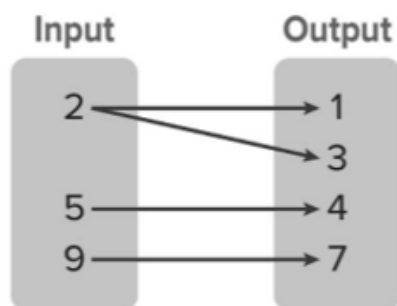
a. Determine if each relation shown below is a function. (**answer yes or no**)



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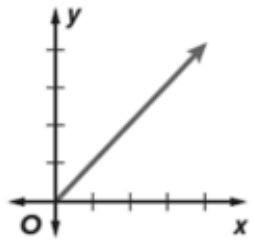
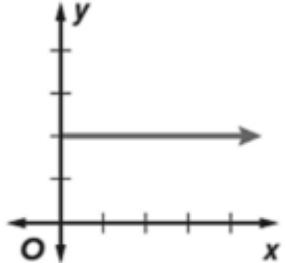
$\{(1,1), (2, 1), (3, 1), (4, 1), (5, 1)\}$

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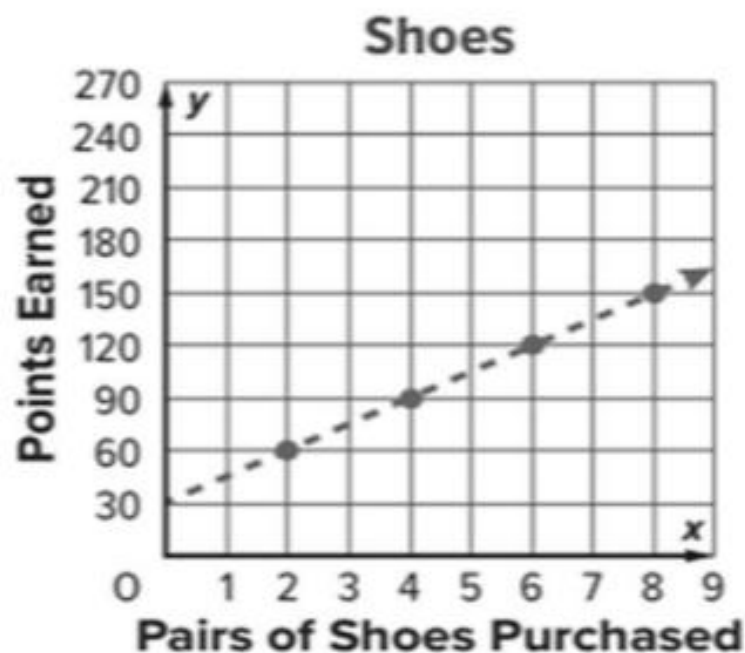
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b. Select the correct word describing each graph.

Graph	Description
	The rate of change is: (increasing OR decreasing OR no change)
	The rate of change is: (increasing OR decreasing OR no change).

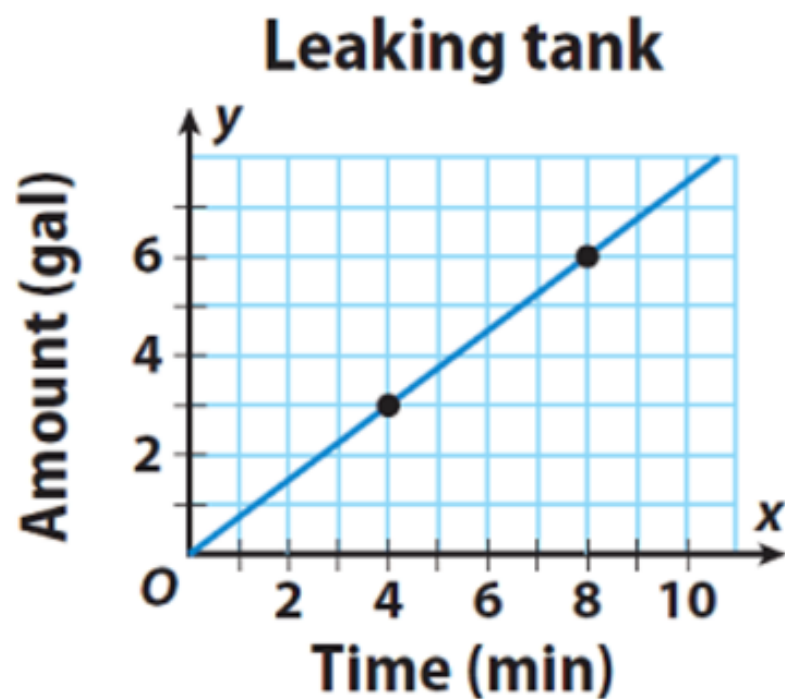
17. Find the rate of change for the graph below. Simplify the answer

(**Hint:** rate of change = $\frac{\text{change in points}}{\text{change in pairs}}$)



18. Find the rate of change for the graph below. Simplify the answer

(**Hint:** rate of change = $\frac{\text{change in amount}}{\text{change in Time}}$)



19. Solve the system of equations by graphing. Describe the solution.

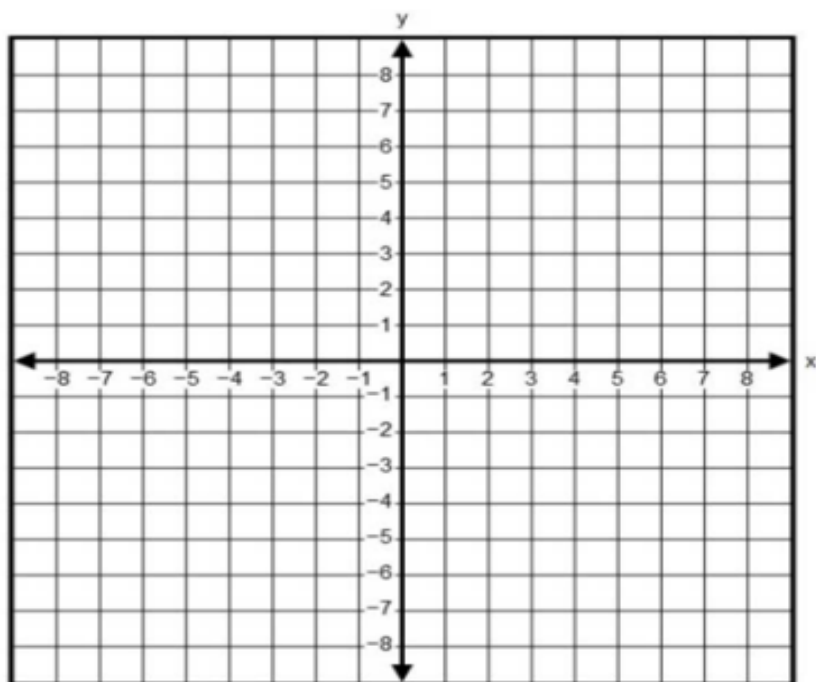
$$\begin{cases} y = -x + 1 \\ y = -x - 3 \end{cases}$$

Graph: $y = -x + 1$

x	$y = -x + 1$
-2	
0	
3	

Graph: $y = -x - 3$

x	$y = -x - 3$
-2	
0	
3	



20. Solve the system of equations by graphing. Describe the solution.

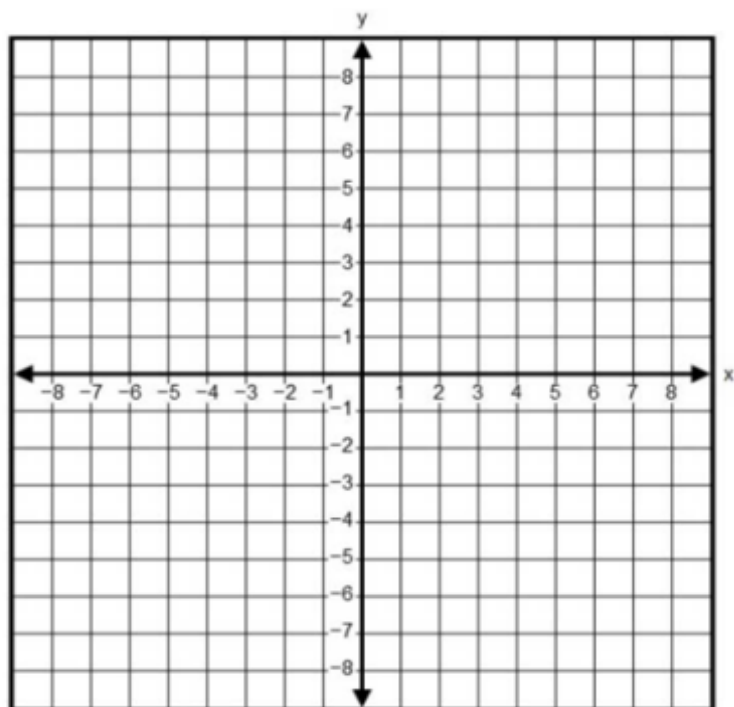
$$\begin{cases} y = -3x \\ y = x + 4 \end{cases}$$

Graph: $y = -3x$

x	$y = -3x$
-1	
0	
2	

Graph: $y = x + 4$

x	$y = x + 4$
-1	
0	
2	



21. Solve the system below by elimination. $\begin{cases} 5x + 2y = 14 \\ 6x - 2y = -3 \end{cases}$

22. Solve the system below by elimination. $\begin{cases} 0.5x + 7y = 25 \\ 0.5x - y = -7 \end{cases}$

23. Solve the system below by elimination. $\begin{cases} 2x + 5y = -3 \\ 9x - 10y = 19 \end{cases}$

24. Solve the system below by elimination. $\begin{cases} -3x + 5y = -7 \\ 10x - 7y = 33 \end{cases}$

25. Solve the system below by substitution. $\begin{cases} y = 8x \\ x + 11y = 44.5 \end{cases}$

26. Solve the system below by substitution. $\begin{cases} 3x = 3y + 6 \\ x + y = 4 \end{cases}$

27. Write a system to represent the situation below (**Do not solve the system**)

Jordan pays a one-time fee of \$60 and \$15 per month for a club.

Lina pays \$25 per month with no starting fee.

Write a system of equations to determine when they pay the same total cost.

28. Write a system to represent the situation below (**Do not solve the system**)

A phone plan charges \$40 upfront and \$8 per month.

Another plan charges \$12 per month with no upfront cost.

Write a system of equations to compare total cost.

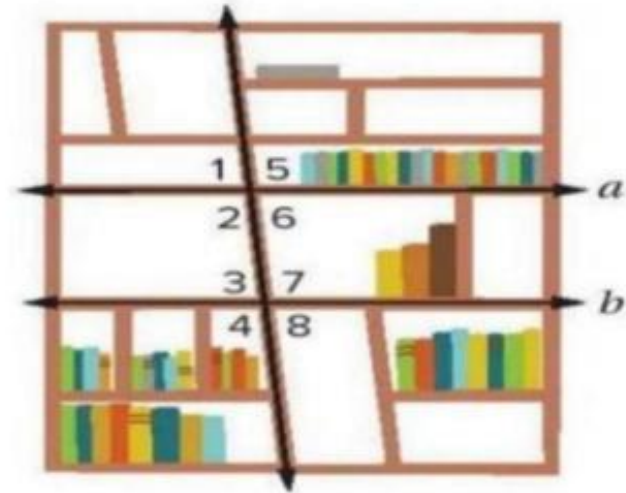
29.

- (a) Use the converse of the Pythagorean theorem to determine whether a triangle with sides **5, 12, and 13** is a right triangle.
- (b) Use the converse of the Pythagorean theorem to determine whether a triangle with sides **9, 10, and 15** is a right triangle.
- (c) Use the converse of the Pythagorean theorem to determine whether a triangle with sides **7, 24, and 25** is a right triangle

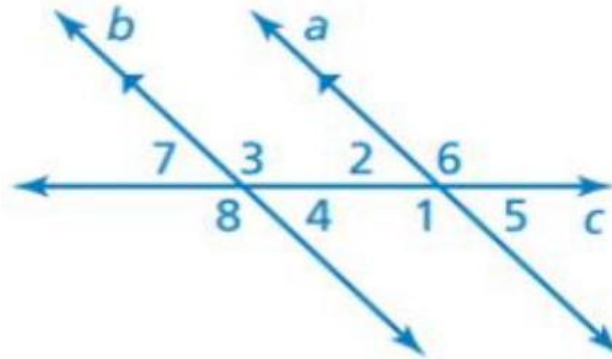
30. Mrs. Kumar designed the bookcase shown. Line a is parallel to line b .

If $m\angle 2 = 105^\circ$, find $m\angle 6$, $m\angle 3$, and $m\angle 4$

Justify your answer.



31. Use the figure below to complete the statement correctly. Explain your reasoning.



If the measure of $\angle 1 = 124^\circ$, then the measure of $\angle 4 =$

If the measure of $\angle 2 = 48^\circ$, then the measure of $\angle 3 =$

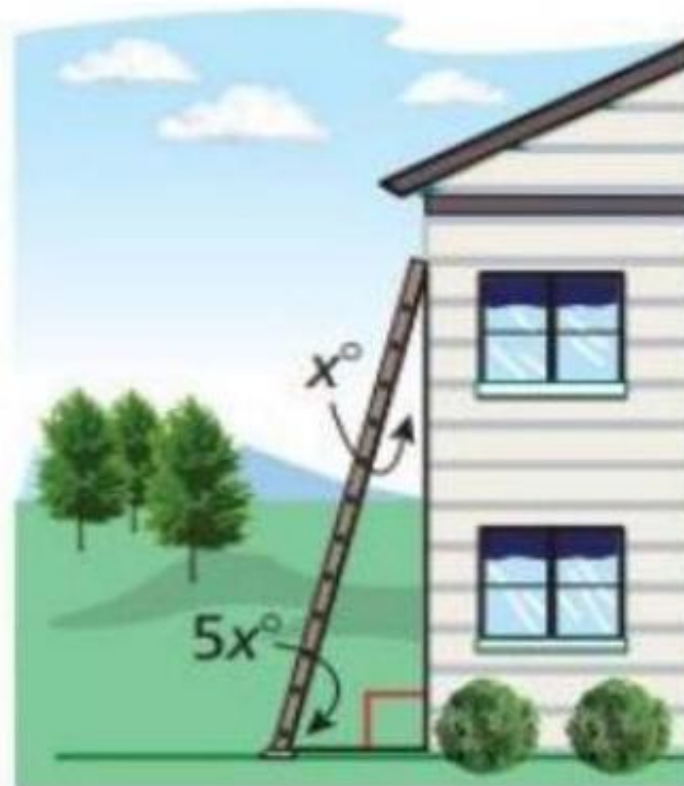
If the measure of $\angle 4 = 55^\circ$, then the measure of $\angle 2 =$

If the measure of $\angle 6 = 120^\circ$, then the measure of $\angle 8 =$

If the measure of $\angle 7 = 50.5^\circ$, then the measure of $\angle 6 =$

32. Find the value of x .

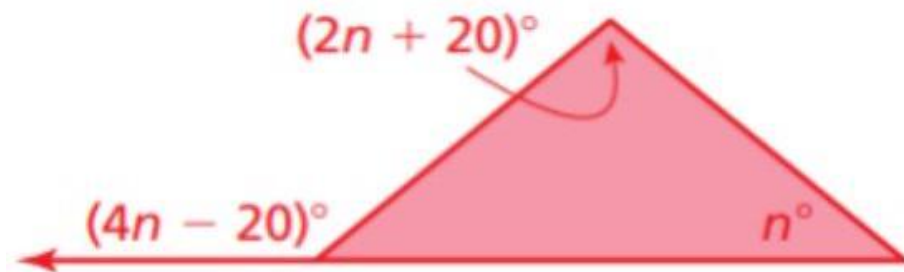
Explain how you get the answer



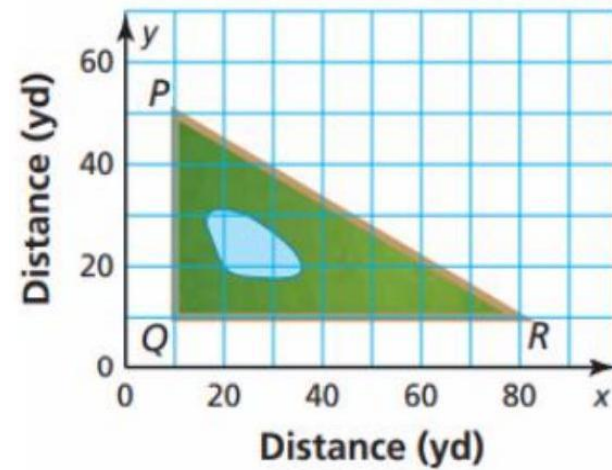
Section III

Challenge Questions

33. Find the value of ***n***



34. A path goes around a triangular park, as shown. Salem walked from P to Q , then from Q to R , and finally returned to P . What is the total distance he walked?



35. Two airplanes are flying to the same airport. Their positions are shown in the graph. Write a system of linear equations that represents this situation. Solve the system to **show** that the two airplanes will meet at the airport.

