

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



ملزمة مراجعة وفق الهيكل الوزاري ريفيل

[موقع المناهج](#) ← [المناهج الإماراتية](#) ← [الصف التاسع العام](#) ← [رياضيات](#) ← [الفصل الثاني](#) ← [الملف](#)

تاريخ نشر الملف على موقع المناهج: 11:13:11 2024-03-03

التواصل الاجتماعي بحسب الصف التاسع العام



روابط مواد الصف التاسع العام على تلغرام

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[اللغة الانجليزية](#)

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[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف التاسع العام والمادة رياضيات في الفصل الثاني

[حل تجميعية أسئلة وفق الهيكل الوزاري بريدج](#)

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مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT



G9 GEN Term 2 (2023-24) End of Term (EoT) Questions

Academic Year	2023/2024
العام الدراسي	
Term	2
الفصل	
Subject	Mathematics/Reveal
المادة	الرياضيات / ريفيل
Grade	9
الصف	
Stream	General
المسار	العام

PART 1

Number of MCQ عدد الأسئلة الموضوعية	15
Marks of MCQ درجة الأسئلة الموضوعية	4

Use elimination to solve each system of equations.

1. $-v + w = 7$
 $v + w = 1$

2. $y + z = 4$
 $y - z = 8$

3. $-4x + 5y = 17$
 $4x + 6y = -6$

4. $5m - 2p = 24$
 $3m + 2p = 24$

5. $a + 4b = -4$
 $a + 10b = -16$

6. $6r - 6t = 6$
 $3r - 6t = 15$

7. $6c - 9d = 111$
 $5c - 9d = 103$

8. $11f + 14g = 13$
 $11f + 10g = 25$

9. $9x + 6y = 78$
 $3x - 6y = -30$

10. $3j + 4k = 23.5$
 $8j - 4k = 4$

11. $-3x - 8y = -24$
 $3x - 5y = 4.5$

12. $6x - 2y = 1$
 $10x - 2y = 5$

13. $x - y = 1$
 $x + y = 3$

14. $-x + y = 1$
 $x + y = 11$

15. $x + 4y = 11$
 $x - 6y = 11$

$$\begin{aligned} 16. \quad & -x + 3y = 6 \\ & x + 3y = 18 \end{aligned}$$

$$\begin{aligned} 17. \quad & 3x + 4y = 19 \\ & 3x + 6y = 33 \end{aligned}$$

$$\begin{aligned} 18. \quad & x + 4y = -8 \\ & x - 4y = -8 \end{aligned}$$

$$\begin{aligned} 19. \quad & 3x + 4y = 2 \\ & 4x - 4y = 12 \end{aligned}$$

$$\begin{aligned} 20. \quad & 3x - y = -1 \\ & -3x - y = 5 \end{aligned}$$

$$\begin{aligned} 21. \quad & 2x - 3y = 9 \\ & -5x - 3y = 30 \end{aligned}$$

$$\begin{aligned} 22. \quad & x - y = 4 \\ & 2x + y = -4 \end{aligned}$$

$$\begin{aligned} 23. \quad & 3x - y = 26 \\ & -2x - y = -24 \end{aligned}$$

$$\begin{aligned} 24. \quad & 5x - y = -6 \\ & -x + y = 2 \end{aligned}$$

$$\begin{aligned} 25. \quad & 6x - 2y = 32 \\ & 4x - 2y = 18 \end{aligned}$$

$$\begin{aligned} 26. \quad & 3x + 2y = -19 \\ & -3x - 5y = 25 \end{aligned}$$

$$\begin{aligned} 27. \quad & 7x + 4y = 2 \\ & 7x + 2y = 8 \end{aligned}$$

Use elimination to solve each system of equations.

1. $x + y = 2$
 $-3x + 4y = 15$

2. $x - y = -8$
 $7x + 5y = 16$

3. $x + 5y = 17$
 $-4x + 3y = 24$

4. $6x + y = -39$
 $3x + 2y = -15$

5. $2x + 5y = 11$
 $4x + 3y = 1$

6. $3x - 3y = -6$
 $-5x + 6y = 12$

7. $3x + 4y = 29$
 $6x + 5y = 43$

8. $8x + 3y = 4$
 $-7x + 5y = -34$

9. $8x + 3y = -7$
 $7x + 2y = -3$

10. $4x + 7y = -80$
 $3x + 5y = -58$

11. $12x - 3y = -3$
 $6x + y = 1$

12. $-4x + 2y = 0$
 $10x + 3y = 8$

- 13. SPORTS** The Fan Cost Index (FCI) tracks the average costs for attending sporting events, including tickets, drinks, food, parking, programs, and souvenirs. According to the FCI, a family of four would spend a total of \$592.30 to attend two Major League Baseball (MLB) games and one National Basketball Association (NBA) game. The family would spend \$691.31 to attend one MLB and two NBA games.
- Write a system of equations to find the family's costs for each kind of game according to the FCI.
 - Solve the system of equations to find the cost for a family of four to attend each kind of game according to the FCI.

- 14. ART** Mr. Santos, the curator of the children's museum, recently made two purchases of firing clay and polymer clay for a visiting artist to sculpt. Use the table to find the cost of each product per kilogram.

Firing Clay (kg)	Polymer Clay (kg)	Total Cost
5	24	\$64.05
25	8	\$51.45

- Write a system of equations to find the cost of each product per kilogram.
- Solve the system of equations to find the cost of each product per kilogram.

Mixed Exercises

- 15.** Two times a number plus three times another number equals 13. The sum of the two numbers is 7. What are the numbers?
- 16.** Four times a number minus twice another number is -16 . The sum of the two numbers is -1 . Find the numbers.

Solve each system of inequalities by graphing.

1. $y < 6$

$$y > x + 3$$

2. $y \geq 0$

$$y \leq x - 5$$

3. $y \leq x + 10$

$$y > 6x + 2$$

4. $y \geq x + 10$

$$y \leq x - 3$$

5. $y < 5x - 5$

$$y > 5x + 9$$

6. $y \geq 3x - 5$

$$3x - y > -4$$

7. $x > -1$

$$y \leq -3$$

8. $y > 2$

$$x < -2$$

9. $y > x + 3$

$$y \leq -1$$

10. $x < 2$

$$y - x \leq 2$$

11. $x + y \leq -1$

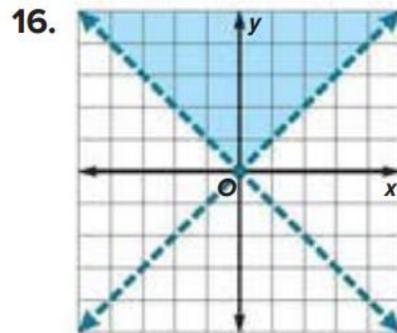
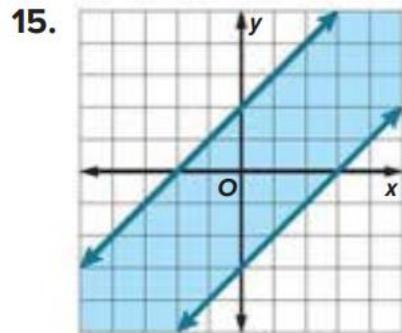
$$x + y \geq 3$$

12. $y - x > 4$

$$x + y > 2$$

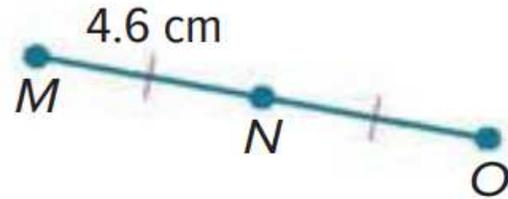
- 13. FITNESS** Diego started an exercise program in which each week he walks from 9 to 12 miles and works out at the gym from 4.5 to 6 hours.
- Write a system of inequalities to represent this situation. Define your variables.
 - Graph the system.
 - List three viable solutions.
- 14. SOUVENIRS** Emiliana wants to buy turquoise stones on her trip to New Mexico to give to at least 4 of her friends. The gift shop sells stones for either \$4 or \$6 per stone. Emiliana has no more than \$30 to spend.
- Write a system of inequalities to represent this situation. Define your variables.
 - Graph the system.
 - List three viable solutions.

Write a system of inequalities for each graph.



Find the measure of each segment.

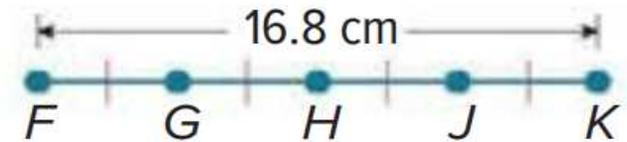
28. \overline{MO}



29. \overline{WY}



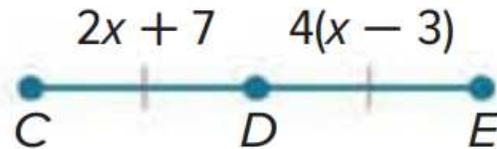
30. \overline{FG}



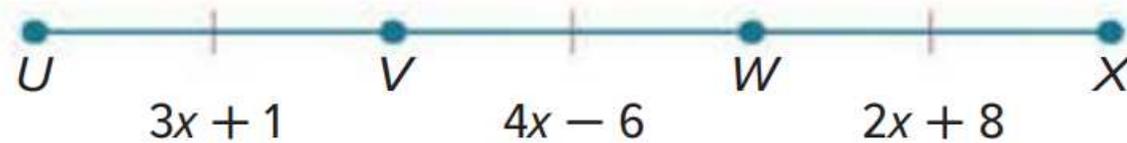
31. \overline{QT}



32. \overline{DE}

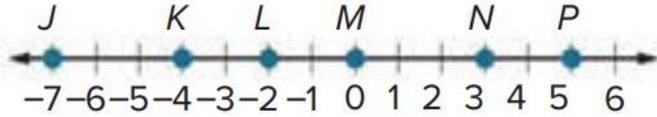


33. \overline{UX}



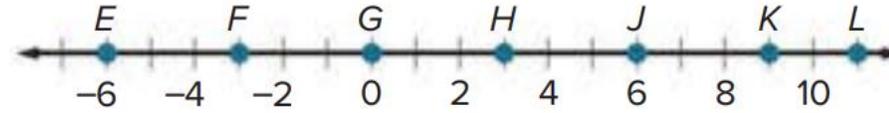
6	Find the length of a line segment on a number line	1 to 20	581
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Use the number line to find each measure.



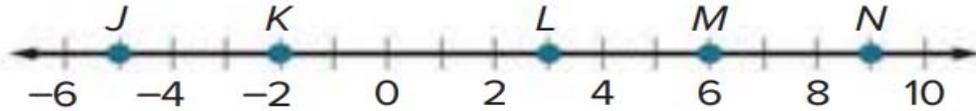
1. JL 2. JK 3. KP
4. NP 5. JP 6. LN

Use the number line to find each measure.



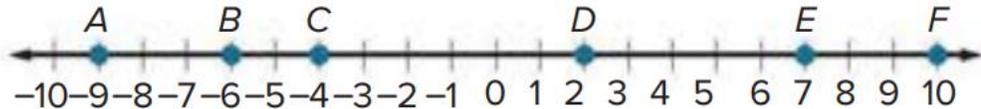
7. JK 8. LK 9. FG
10. JG 11. EH 12. LF

Use the number line to find each measure.



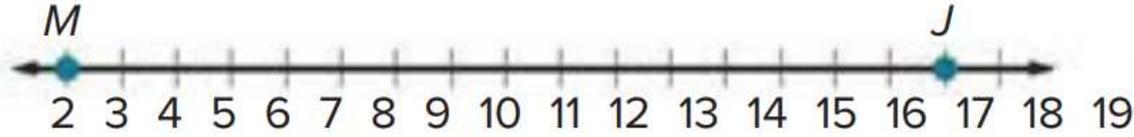
13. LN 14. JL

Determine whether the given segments are congruent. Write yes or no.



15. \overline{AB} and \overline{EF} 16. \overline{BD} and \overline{DF} 17. \overline{AC} and \overline{CD}
18. \overline{AC} and \overline{DE} 19. \overline{BE} and \overline{CF} 20. \overline{CD} and \overline{DF}

Refer to the number line.

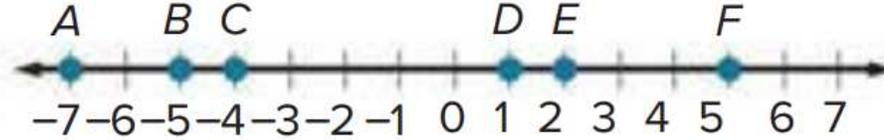


1. Find the coordinate of point B that is $\frac{1}{4}$ of the distance from M to J . **6**

2. Find the coordinate of point C that is $\frac{7}{8}$ of the distance from M to J . **16**

3. Find the coordinate of point D that is $\frac{7}{16}$ of the distance from M to J . **9**

Refer to the number line.



7. Find the coordinate of point G that is $\frac{2}{3}$ of the distance from B to D . **-1**

8. Find the coordinate of point H that is $\frac{1}{5}$ of the distance from C to F . **-2.2**

9. Find the coordinate of point J that is $\frac{1}{6}$ of the distance from A to E . **-5.5**

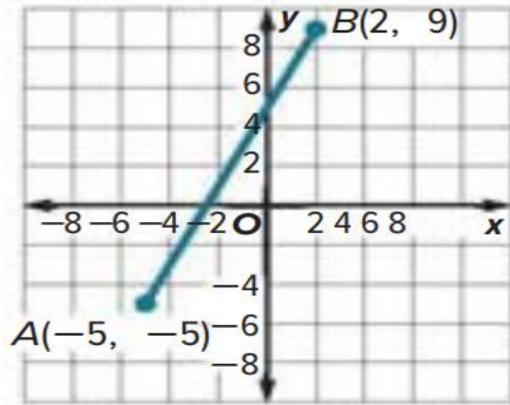
7	Find a point on a directed line segment on a number line that is a given fractional distance from the initial point	1 to 14	589
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4. Find the coordinate of point X such that the ratio of MX to XJ is 3:1. **14**
5. Find the coordinate of point X such that the ratio of MX to XJ is 2:3. **8.4**
6. Find the coordinate of point X such that the ratio of MX to XJ is 1:1. **10**
10. Find the coordinate of point K that is $\frac{4}{5}$ of the distance from A to F . **2.6**
11. Find the coordinate of point X such that the ratio of AX to XF is 1:3. **-4**
12. Find the coordinate of point X such that the ratio of BX to XF is 3:2. **1**
13. Find the coordinate of point X such that the ratio of CX to XE is 1:1. **-1**
14. Find the coordinate of point X such that the ratio of FX to XD is 5:3. **2.5**

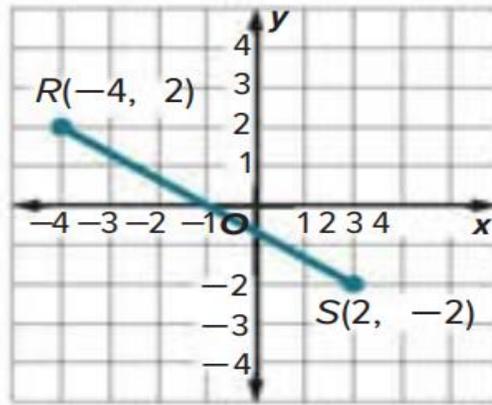
8	Find a point that partitions a directed line segment on the coordinate plane in a given ratio	1 to 3	597
		7 to 10	

Find the coordinates of point X on the coordinate plane for each situation.

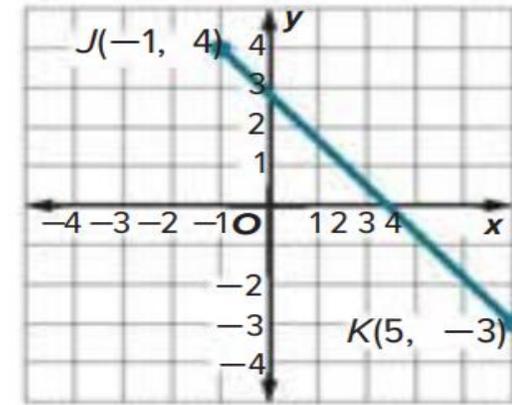
1. Point X on \overline{AB} is $\frac{1}{5}$ of the distance from A to B .



2. Point X on \overline{RS} is $\frac{1}{6}$ of the distance from R to S .

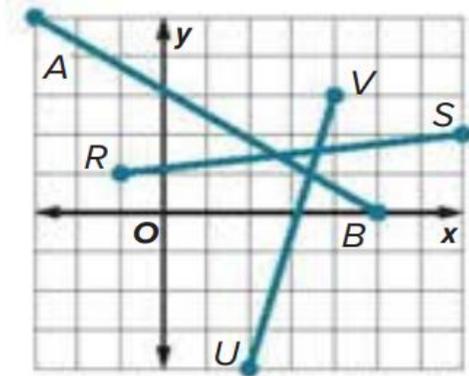


3. Point X on \overline{JK} is $\frac{1}{3}$ of the distance from J to K .

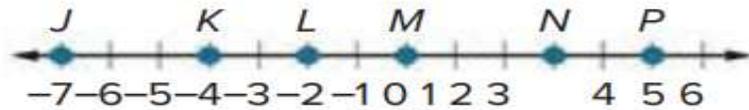


Refer to the coordinate grid.

7. Find point C on \overline{AB} that is $\frac{1}{3}$ of the distance from A to B .
8. Find point Q on \overline{RS} that is $\frac{5}{8}$ of the distance from R to S .
9. Find point W on \overline{UV} that is $\frac{1}{7}$ of the distance from U to V .
10. Find point D on \overline{AB} that is $\frac{3}{4}$ of the distance from A to B .



Use the number line to find the coordinate of the midpoint of each segment.



1. \overline{KM}

2. \overline{JP}

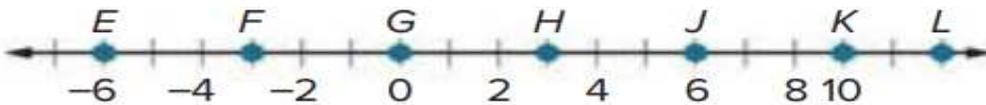
3. \overline{LN}

4. \overline{MP}

5. \overline{LP}

6. \overline{JN}

Use the number line to find the coordinate of the midpoint of each segment.



7. \overline{FK}

8. \overline{HK}

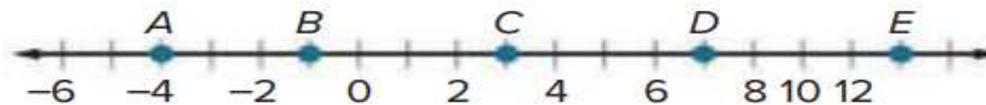
9. \overline{EF}

10. \overline{FG}

11. \overline{JL}

12. \overline{EL}

USE TOOLS Use the number line to find the coordinate of the midpoint of each segment.



13. \overline{DE}

14. \overline{BC}

15. \overline{BD}

16. \overline{AD}

Find the coordinates of the midpoint of a segment with the given endpoints.

19. $(5, 11), (3, 1)$

20. $(7, -5), (3, 3)$

21. $(-8, -11), (2, 5)$

22. $(7, 0), (2, 4)$

23. $(-5, 1), (2, 6)$

24. $(-4, -7), (12, -6)$

25. $(2, 8), (8, 0)$

26. $(9, -3), (5, 1)$

27. $(22, 4), (15, 7)$

28. $(12, 2), (7, 9)$

29. $(-15, 4), (2, -10)$

30. $(-2, 5), (3, -17)$

31. $(2.4, 14), (6, 6.8)$

32. $(-11.2, -3.4), (-5.6, -7.8)$

Example 4

Find the coordinates of the missing endpoint if B is the midpoint of \overline{AC} .

33. $C(-5, 4), B(-2, 5)$

34. $A(1, 7), B(-3, 1)$

35. $A(-4, 2), B(6, -1)$

36. $C(-6, -2), B(-3, -5)$

37. $A(4, -0.25), B(-4, 6.5)$

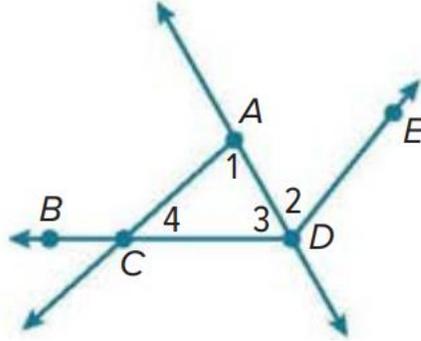
38. $C\left(\frac{5}{3}, -6\right), B\left(\frac{8}{3}, 4\right)$

Use the figure to identify angles and parts of angles that satisfy each given condition.

1. Name the vertex of $\angle 1$. **A**

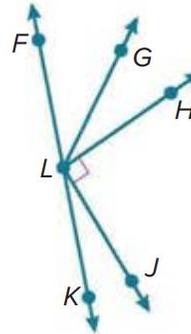
2. Name the sides of $\angle 4$. **\vec{CA}, \vec{CD}**

3. What is another name for $\angle 3$? **$\angle ADC, \angle CDA$**



4. What is another name for $\angle CAD$? **$\angle 1, \angle DAC$**

5. In the figure, \vec{LF} and \vec{LK} are opposite rays. \vec{LG} bisects $\angle FLH$.
If $m\angle FLG = 14x + 5$ and $m\angle HLG = 17x - 1$, find $m\angle FLH$. **66°**

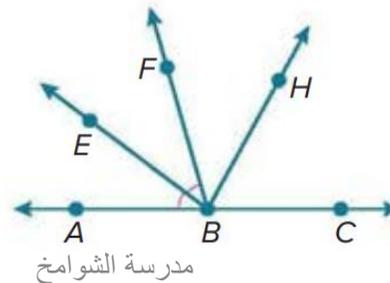


In the figure, \vec{BA} and \vec{BC} are opposite rays. \vec{BH} bisects $\angle EBC$ and \vec{BE} bisects $\angle ABF$.

6. If $m\angle ABE = 2n + 7$ and $m\angle EBF = 4n - 13$, find $m\angle ABE$. **27°**

7. If $m\angle EBH = 6x + 12$ and $m\angle HBC = 8x - 10$, find $m\angle EBH$. **78°**

8. If $m\angle ABF = 7b - 24$ and $m\angle ABE = 2b$, find $m\angle EBF$. **16°**



مدرسة الشوامخ

9. If $m\angle EBC = 31a - 2$ and $m\angle EBH = 4a + 45$, find $m\angle HBC$. **61°**

10. If $m\angle ABF = 8w - 6$ and $m\angle ABE = 2(w + 11)$, find $m\angle EBF$. **47°**

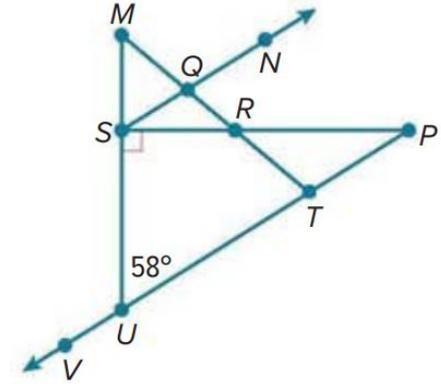
11. If $m\angle EBC = 3r + 10$ and $m\angle ABE = 2r - 20$, find $m\angle EBF$. **56°**

Refer to the figure.

12. Name two adjacent angles. **Sample answer: $\angle MQN$ and $\angle NQR$**

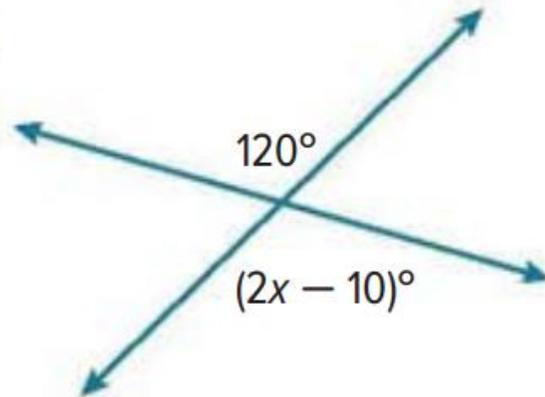
13. Name two vertical angles. **Sample answer: $\angle SRQ$ and $\angle TRP$**

14. Find $m\angle SUV$. **122°**

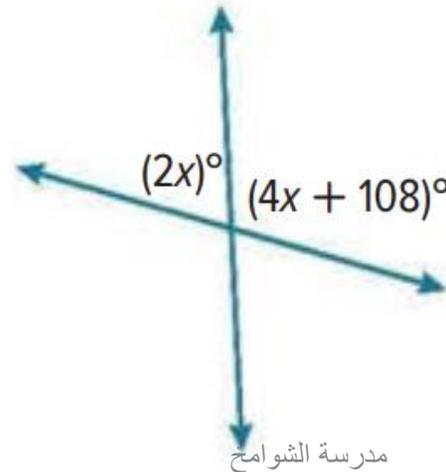


Find the value of each variable.

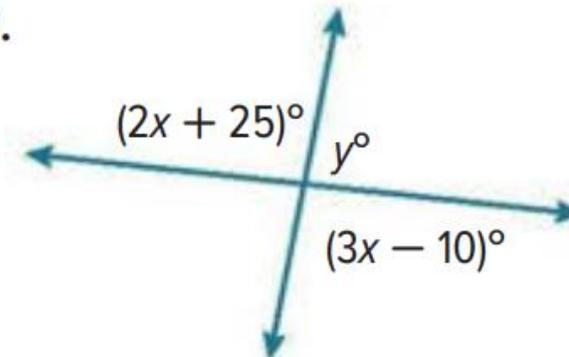
15.



16.

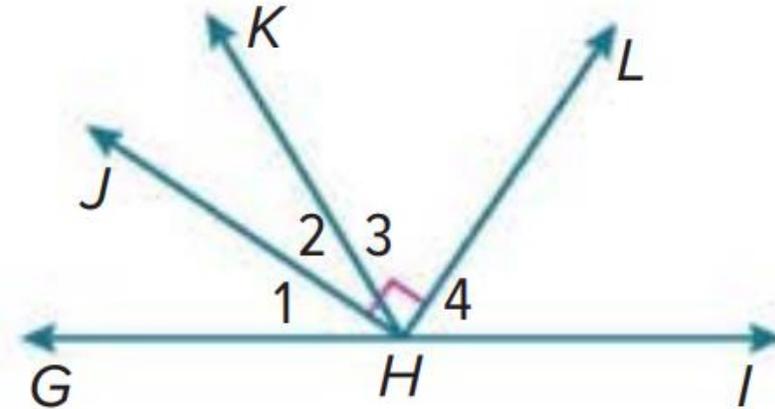


17.



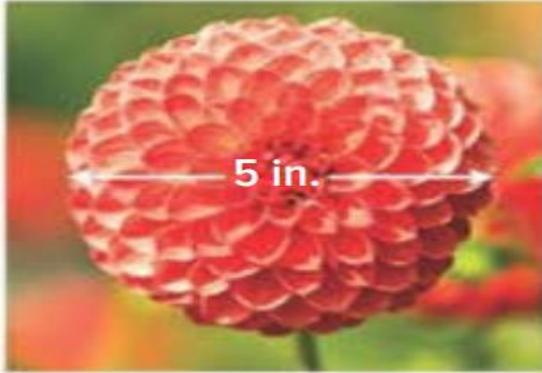
1. Find the measures of two supplementary angles if the difference between the measures of the two angles is 35° .
2. $\angle E$ and $\angle F$ are complementary. The measure of $\angle E$ is 54° more than the measure of $\angle F$. Find the measure of each angle.
3. The measure of an angle's supplement is 76° less than the measure of the angle. Find the measures of the angle and its supplement.
4. $\angle Q$ and $\angle R$ are complementary. The measure of $\angle Q$ is 26° less than the measure of $\angle R$. Find the measure of each angle.
5. The measure of the supplement of an angle is three times the measure of the angle. Find the measures of the angle and its supplement.
6. The bascule bridge shown is opening from its horizontal position to its fully vertical position. So far, the bridge has lifted 35° in 21 seconds. At this rate, how much longer will it take for the bridge to reach its vertical position?

7. Rays BA and BC are perpendicular. Point D lies in the interior of $\angle ABC$.
If $m\angle ABD = (3r + 5)^\circ$ and $m\angle DBC = (5r - 27)^\circ$, find $m\angle ABD$ and $m\angle DBC$.
8. \overleftrightarrow{WX} and \overleftrightarrow{YZ} intersect at point V . If $m\angle WVY = (4a + 58)^\circ$ and $m\angle XVY = (2b - 18)^\circ$,
find the values of a and b such that \overleftrightarrow{WX} is perpendicular to \overleftrightarrow{YZ} .
9. Refer to the figure at the right. If
 $m\angle 2 = (a + 15)^\circ$ and $m\angle 3 = (a + 35)^\circ$, find the
value of a such that $\overrightarrow{HL} \perp \overrightarrow{HJ}$.
10. Rays DA and DC are perpendicular. Point B lies
in the interior of $\angle ADC$. If $m\angle ADB = (3a + 10)^\circ$
and $m\angle BDC = 13a^\circ$, find a , $m\angle ADB$, and
 $m\angle BDC$.

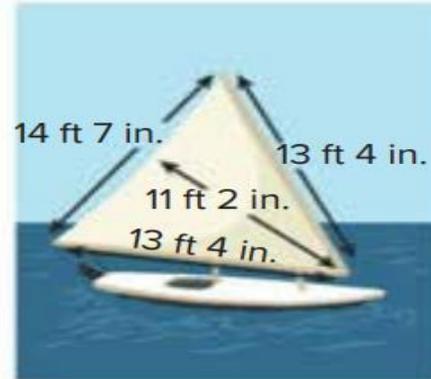


Use a two-dimensional model and the dimensions provided to calculate the perimeter or circumference and area of each object. Round to the nearest tenth, if necessary.

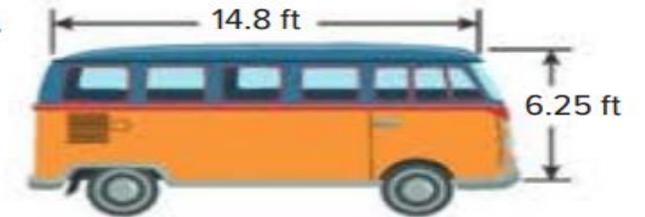
7.



8.



9.



Example 3

10. **DESIGN** Dev is designing a new sign for his art studio. However, he needs to make several improvements to the sign before it is ready to be hung.

- Dev wants to add a metal trim around the perimeter of the sign. How much trim should Dev purchase? Round answer to the nearest foot. **23 ft**
- The front of the sign also needs to be waterproofed with a protective sealer. How much area needs to be covered by the sealer? Round answer to the nearest square foot. **28 ft²**
- If a pint of sealer covers an area of 20 square feet, then how many pints of sealer should Dev purchase? **2 pints**



PART 2

Number of FRQ عدد الأسئلة المقالية	6
Marks per FRQ الدرجات للأسئلة المقالية	(5-10)

16	Solve various systems of linear equations by using substitution	1 to 17	403
	Solve systems of equations by using elimination with subtraction	1 to 27	409

Use substitution to solve each system of equations.

$$\begin{aligned} 1. \quad & y = 5x + 1 \\ & 4x + y = 10 \end{aligned}$$

$$\begin{aligned} 4. \quad & y = 3x - 2 \\ & y = 2x - 5 \end{aligned}$$

$$\begin{aligned} 7. \quad & y = -3x + 4 \\ & -6x - 2y = -8 \end{aligned}$$

$$\begin{aligned} 10. \quad & y = -4x + 11 \\ & 3x + y = 9 \end{aligned}$$

$$\begin{aligned} 13. \quad & 5x - y = 5 \\ & -x + 3y = 13 \end{aligned}$$

$$\begin{aligned} 2. \quad & y = 4x + 5 \\ & 2x + y = 17 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2x + y = 3 \\ & 4x + 4y = 8 \end{aligned}$$

$$\begin{aligned} 8. \quad & -1 = 2x - y \\ & 8x - 4y = -4 \end{aligned}$$

$$\begin{aligned} 11. \quad & y = -3x + 1 \\ & 2x + y = 1 \end{aligned}$$

$$\begin{aligned} 14. \quad & 2x + y = 4 \\ & -2x + y = -4 \end{aligned}$$

$$\begin{aligned} 3. \quad & y = 3x - 34 \\ & y = 2x - 5 \end{aligned}$$

$$\begin{aligned} 6. \quad & 3x + 4y = -3 \\ & x + 2y = -1 \end{aligned}$$

$$\begin{aligned} 9. \quad & x = y - 1 \\ & -x + y = -1 \end{aligned}$$

$$\begin{aligned} 12. \quad & 3x + y = -5 \\ & 6x + 2y = 10 \end{aligned}$$

$$\begin{aligned} 15. \quad & -5x + 4y = 20 \\ & 10x - 8y = -40 \end{aligned}$$

16	Solve various systems of linear equations by using substitution	1 to 17	403
	Solve systems of equations by using elimination with subtraction	1 to 27	409

- 16. MONEY** Harvey has some \$1 bills and some \$5 bills. In all, he has 6 bills worth \$22. Let x be the number of \$1 bills, and let y be the number of \$5 bills. Write a system of equations to represent the information, and use substitution to determine how many bills of each denomination Harvey has.
- 17. REASONING** Shelby and Calvin are conducting an experiment in chemistry class. They need 5 milliliters of a solution that is 65% acid and 35% distilled water. There is no undiluted acid in the chemistry lab, but they do have two beakers of diluted acid. Beaker A contains 70% acid and 30% distilled water. Beaker B contains 20% acid and 80% distilled water.
- Write a system of equations that Shelby and Calvin could use to determine how many milliliters they need to pour from each beaker to make their solution.
 - Solve your system of equations. How many milliliters from each beaker do Shelby and Calvin need?

16	Solve various systems of linear equations by using substitution	1 to 17	403
	Solve systems of equations by using elimination with subtraction	1 to 27	409

Use elimination to solve each system of equations.

$$\begin{aligned} 1. \quad & -v + w = 7 \\ & v + w = 1 \end{aligned}$$

$$\begin{aligned} 2. \quad & y + z = 4 \\ & y - z = 8 \end{aligned}$$

$$\begin{aligned} 3. \quad & -4x + 5y = 17 \\ & 4x + 6y = -6 \end{aligned}$$

$$\begin{aligned} 4. \quad & 5m - 2p = 24 \\ & 3m + 2p = 24 \end{aligned}$$

$$\begin{aligned} 5. \quad & a + 4b = -4 \\ & a + 10b = -16 \end{aligned}$$

$$\begin{aligned} 6. \quad & 6r - 6t = 6 \\ & 3r - 6t = 15 \end{aligned}$$

$$\begin{aligned} 7. \quad & 6c - 9d = 111 \\ & 5c - 9d = 103 \end{aligned}$$

$$\begin{aligned} 8. \quad & 11f + 14g = 13 \\ & 11f + 10g = 25 \end{aligned}$$

$$\begin{aligned} 9. \quad & 9x + 6y = 78 \\ & 3x - 6y = -30 \end{aligned}$$

$$\begin{aligned} 10. \quad & 3j + 4k = 23.5 \\ & 8j - 4k = 4 \end{aligned}$$

$$\begin{aligned} 11. \quad & -3x - 8y = -24 \\ & 3x - 5y = 4.5 \end{aligned}$$

$$\begin{aligned} 12. \quad & 6x - 2y = 1 \\ & 10x - 2y = 5 \end{aligned}$$

16	Solve various systems of linear equations by using substitution	1 to 17	403
	Solve systems of equations by using elimination with subtraction	1 to 27	409

13. $x - y = 1$
 $x + y = 3$

14. $-x + y = 1$
 $x + y = 11$

15. $x + 4y = 11$
 $x - 6y = 11$

16. $-x + 3y = 6$
 $x + 3y = 18$

17. $3x + 4y = 19$
 $3x + 6y = 33$

18. $x + 4y = -8$
 $x - 4y = -8$

19. $3x + 4y = 2$
 $4x - 4y = 12$

20. $3x - y = -1$
 $-3x - y = 5$

21. $2x - 3y = 9$
 $-5x - 3y = 30$

22. $x - y = 4$
 $2x + y = -4$

23. $3x - y = 26$
 $-2x - y = -24$

24. $5x - y = -6$
 $-x + y = 2$

25. $6x - 2y = 32$
 $4x - 2y = 18$

26. $3x + 2y = -19$
 $-3x - 5y = 25$

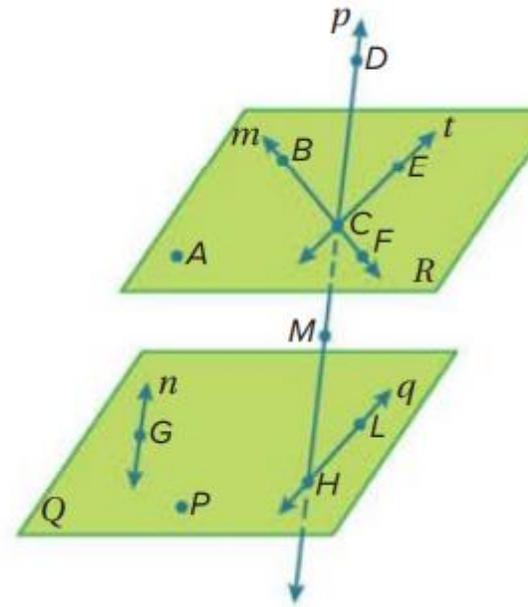
27. $7x + 4y = 2$
 $7x + 2y = 8$

17	Identify and model points, lines, and planes	1 to 28	565, 566
	Identify intersecting lines and planes		

Example 1

Refer to the figure for Exercises 1–7.

1. Name the lines that are only in plane Q .
2. How many planes are labeled in the figure?
3. Name the plane containing the lines m and t .
4. Name the intersection of lines m and t .
5. Name a point that is *not* coplanar with points A , B , and C .
6. Are points F , M , G , and P coplanar? Explain.
7. Does line n intersect line q ? Explain.



17	Identify and model points, lines, and planes	1 to 28	565, 566
	Identify intersecting lines and planes		

Name the geometric terms modeled by each object or phrase.

8. roof of a house



9. a tabletop



10. bridge support beam



11. a chessboard



12.



13.



14. a wall and the floor

15. the edge of a table

16. two connected walls

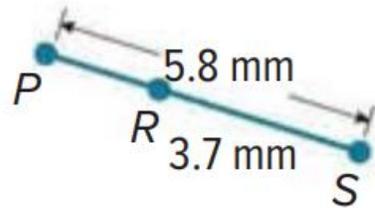
17. a blanket

18. a telephone pole

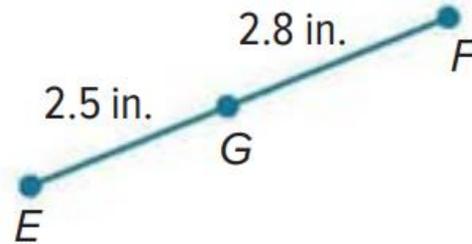
19. a tablet computer

Find the measure of each segment.

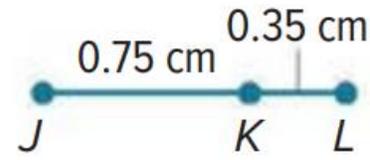
1. \overline{PR}



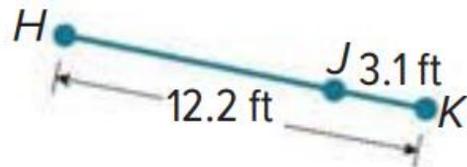
2. \overline{EF}



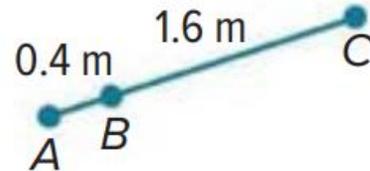
3. \overline{JL}



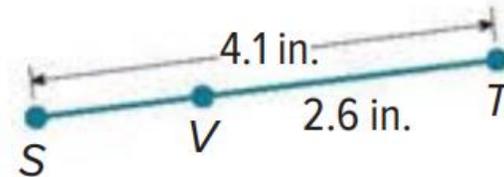
4. \overline{HJ}



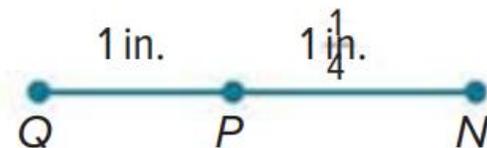
5. \overline{AC}



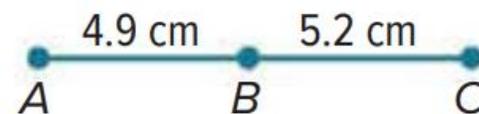
6. \overline{SV}



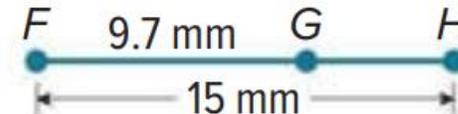
7. \overline{NQ}



8. \overline{AC}



9. \overline{GH}



Find the value of the variable and YZ if Y is between X and Z .

10. $XY = 11$, $YZ = 4c$, $XZ = 83$

11. $XY = 6b$, $YZ = 8b$, $XZ = 175$

12. $XY = 7a$, $YZ = 5a$, $XZ = 6a + 24$

13. $XY = 5.5$, $YZ = 2c$, $XZ = 8.9$

14. $XY = 5n$, $YZ = 2n$, $XZ = 91$

15. $XY = 4w$, $YZ = 6w$, $XZ = 12w - 8$

16. $XY = 11d$, $YZ = 9d - 2$, $XZ = 5d + 28$

17. $XY = 4n + 3$, $YZ = 2n - 7$, $XZ = 20$

18. $XY = 3a - 4$, $YZ = 6a + 2$, $XZ = 5a + 22$

19. $XY = 3k - 2$, $YZ = 7k + 4$, $XZ = 4k + 38$

20. $XY = 4x$, $YZ = x$, and $XZ = 25$

21. $XY = 4x$, $YZ = 3x$, and $XZ = 42$

22. $XY = 12$, $YZ = 2x$, and $XZ = 28$

23. $XY = 2x + 1$, $YZ = 6x$, and $XZ = 81$

24. RAILROADS A straight railroad track is being built to connect two cities. The measured distance of the track between the two cities is 160.5 miles. A mail stop is 28.5 miles from the first city. How far is the mail stop from the second city?

25. CARPENTRY A carpenter has a piece of wood that is 78 inches long. He wants to cut it so that one piece is five times as long as the other piece. What are the lengths of the two pieces?

26. WALKING Marshall lives 2300 yards from school and 1500 yards from the pharmacy. The school, pharmacy, and his home are all collinear, as shown in the figure.



What is the distance from the pharmacy to the school?

27. COFFEE SHOP Chenoa wants to stop for coffee on her way to school. The distance from Chenoa's house to the coffee shop is 3 miles more than twice the distance from the coffee shop to Chenoa's school. The total distance from Chenoa's house to her school is 5 times the distance from the coffee shop to her school.

a. What is the distance from Chenoa's house to the coffee shop? Write your answer as a decimal, if necessary.

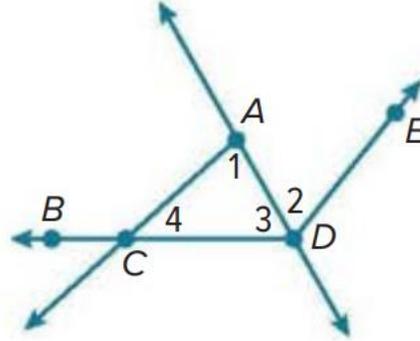
b. What assumptions did you make when solving this problem?

Use the figure to identify angles and parts of angles that satisfy each given condition.

1. Name the vertex of $\angle 1$. **A**

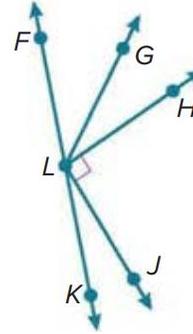
2. Name the sides of $\angle 4$. **\vec{CA}, \vec{CD}**

3. What is another name for $\angle 3$? **$\angle ADC, \angle CDA$**



4. What is another name for $\angle CAD$? **$\angle 1, \angle DAC$**

5. In the figure, \vec{LF} and \vec{LK} are opposite rays. \vec{LG} bisects $\angle FLH$.
If $m\angle FLG = 14x + 5$ and $m\angle HLG = 17x - 1$, find $m\angle FLH$. **66°**

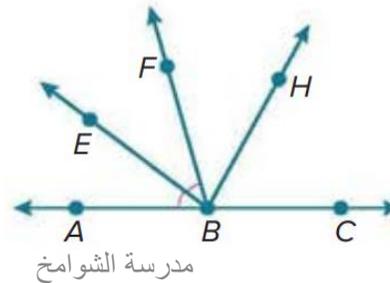


In the figure, \vec{BA} and \vec{BC} are opposite rays. \vec{BH} bisects $\angle EBC$ and \vec{BE} bisects $\angle ABF$.

6. If $m\angle ABE = 2n + 7$ and $m\angle EBF = 4n - 13$, find $m\angle ABE$. **27°**

7. If $m\angle EBH = 6x + 12$ and $m\angle HBC = 8x - 10$, find $m\angle EBH$. **78°**

8. If $m\angle ABF = 7b - 24$ and $m\angle ABE = 2b$, find $m\angle EBF$. **16°**



9. If $m\angle EBC = 31a - 2$ and $m\angle EBH = 4a + 45$, find $m\angle HBC$. **61°**

10. If $m\angle ABF = 8w - 6$ and $m\angle ABE = 2(w + 11)$, find $m\angle EBF$. **47°**

11. If $m\angle EBC = 3r + 10$ and $m\angle ABE = 2r - 20$, find $m\angle EBF$. **56°**

Find the perimeter or circumference and area of each figure if each unit on the graph measures 1 centimeter. Round answers to the nearest tenth, if necessary.

