Geometry- Mrs. Tilus
Unit 1 Test Review

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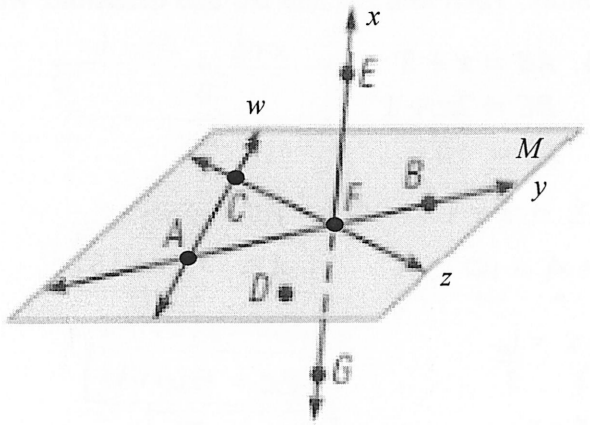
Use the diagram to answer the following questions



1. How many points determine a line?

2

2. How many points determine a plane?

3

3. How do you symbolically represent ray FB?

$\overrightarrow{FB}$

4. How do you symbolically represent line EG?

$\overleftrightarrow{EG}$

5. How do you symbolically represent line segment AC?

$\overline{AC}$

6. Give another name for line *z*.

$\overleftrightarrow{CF}$ or $\overleftrightarrow{FC}$

7. Give another name for plane *M*.

Plane ABC, Plane CFB, Plane DAC, ...

8. Name three points that are not collinear.

Points C, B, E

9. Name four points that are coplanar.

Point A, B, C, D

10. Name a pair of opposite rays

$\overrightarrow{FB}$ and $\overrightarrow{FA}$

11. Name the intersection of line *w* and line *y*.

Point A

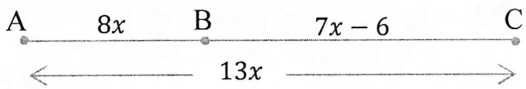
12. Name the intersection of line *x* and plane *M*.

Point F

13. Name a line that intersects plane M at more than one point.

line w, line y, line z

14. Find AB, BC and AC



$8x + 7x - 6 = 13x$

$15x - 6 = 13x$

$-15x \quad -15x$

$\frac{-6}{-2} = \frac{-2x}{-2}$

$x = 3$

$AB = 8(3)$

$AB = 24$ units

$BC = 7(3) - 6$

$BC = 15$ units

$AC = 13(3)$

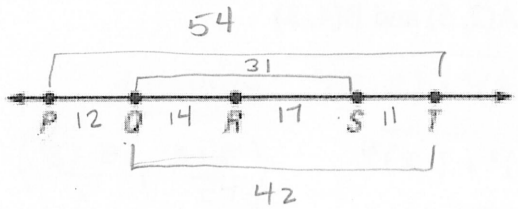
$AC = 39$ units

✓: $24 + 15 = 39$? true

In the diagram, P, Q, R, S and T are collinear. $PT = 54, QT = 42, QS = 31$ and $RS = 17$. Find the indicated length.

15. PQ = 12 units

16. PS = 43 units



17. QR = 14 units

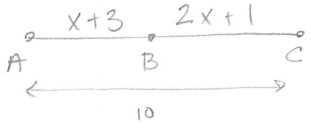
18. PR = 26 units

19. ST = 11 units

20. RT = 28 units

Point B is between A and C on $\overline{AC}$. Use the given information to write an equation in terms of x. Solve the equation. Then find $\overline{AB}$ and $\overline{BC}$ and determine whether AB and BC are congruent.

21. $AB = x + 3$
$BC = 2x + 1$
$AC = 10$



$x + 3 + 2x + 1 = 10$

$3x + 4 = 10$
$-4 \quad -4$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

$AB = 2 + 3$

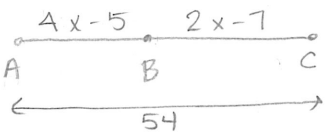
$AB = 5$ units

$BC = 2(2) + 1$

$BC = 5$ units

$\overline{AB} \cong \overline{BC}$

22. $AB = 4x - 5$
$BC = 2x - 7$
$AC = 54$



$4x - 5 + 2x - 7 = 54$

$6x - 12 = 54$
$+12 \quad +12$

$\frac{6x}{6} = \frac{66}{6}$

$x = 11$

$AB = 4(11) - 5$

$AB = 39$ units

$BC = 2(11) - 7$

$BC = 15$ units

$\overline{AB} \neq \overline{BC}$

Study Me!!! ★ Find in your notes ★

A segment bisector is…

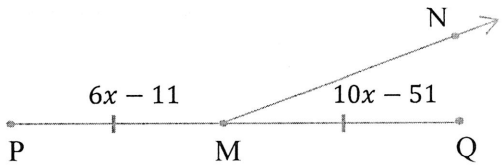
An angle bisector is…

Distance Formula =

Midpoint Formula (for two points) =

23. What is the segment bisector of $\overline{PQ}$? $\overleftrightarrow{MN}$

24. Find PQ.



$6x - 11 = 10x - 51$
$-6x \quad +51 \quad -6x \quad +51$

$\frac{40}{4} = \frac{4x}{4}$

$x = 10$

$PM = 6(10) - 11$

$PM = 49$

$PQ = 2(49)$

$PQ = 98$ units

The endpoints of a segment are given.

a.) Find the length of the segment rounded to the nearest tenth.

b.) Then find the coordinates of the midpoint of the segment.

25. A(2, 5) and B(4, 3) (x_1, y_1 and x_2, y_2)

$D = \sqrt{(4-2)^2 + (3-5)^2}$

$D = \sqrt{(2)^2 + (-2)^2}$

$D = \sqrt{4+4}$

$D = \sqrt{8}$

$D = 2.8$ units

Midpoint

$\left(\frac{2+4}{2}, \frac{5+3}{2}\right)$

$(3, 4)$

26. F(10, 6) and G(6, 0) (x_1, y_1 and x_2, y_2)

$D = \sqrt{(6-10)^2 + (0-6)^2}$

$D = \sqrt{(-4)^2 + (-6)^2}$

$D = \sqrt{16 + 36}$

$D = \sqrt{52}$

$D = 7.2$ units

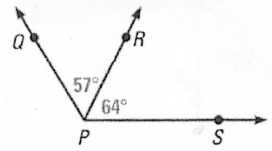
Midpoint:

$\left(\frac{10+6}{2}, \frac{6+0}{2}\right)$

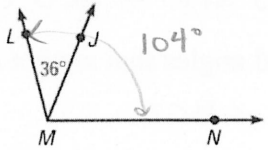
$(8, 3)$

Use the given information to find the indicated angle measure.

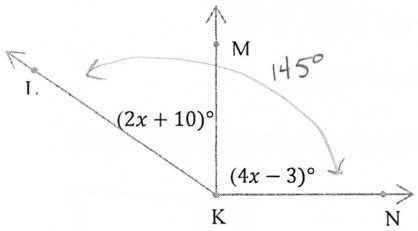
27. $m\angle QPS =$ 121°



28. $m\angle JMN =$ 68°, if $m\angle LMN = 104°$



29. Find $m\angle LKM$ and $m\angle MKN$, if $m\angle LKN = 145°$.



$2x + 10 + 4x - 3 = 145°$

$6x + 7 = 145$

$-7 \quad -7$

$\frac{6x}{6} = \frac{138}{6}$

$x = 23$

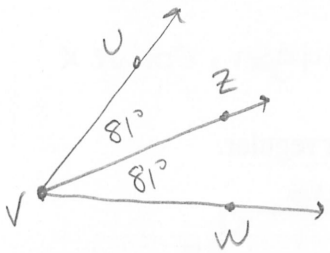
$m\angle LKM = 2(23) + 10$

$m\angle LKM = 56°$

$m\angle MKN = 145 - 56$

$m\angle MKN = 89°$

30. $\overrightarrow{VZ}$ bisects $\angle UVW$, and $m\angle UVZ = 81°$. Find $m\angle UVW$. Then classify $\angle UVW$ by its angle measure.



$m\angle UVW = 81° + 81°$

$m\angle UVW = 162°$

★ Find in your notes ★

Complementary Angles are two angles _____

Supplementary Angles are two angles _____

31. Find the complementary and supplementary angles for $\angle A$, if $m\angle A = 65°$

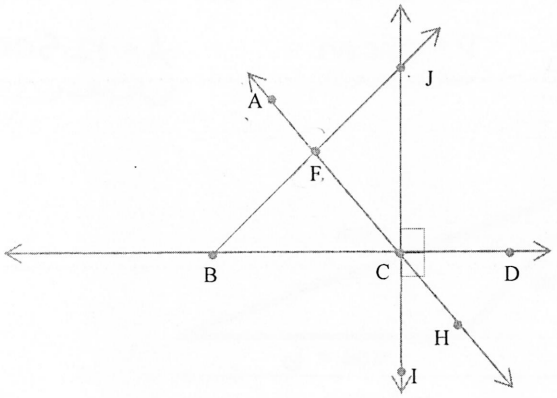
Complementary Angle = $90° - 65°$

$= 25°$

Supplementary Angle = $180° - 65°$

$= 115°$

Find **two** of each of the following in the diagram below.



32. Adjacent Angles
∠AFJ and ∠JFC
∠ICH and ∠HCD

33. Complementary Angles
∠ICH and ∠HCD
∠BCF and ∠FCJ

34. Supplementary Angles
∠BFA and ∠AFJ
∠BCI and ∠ICD

35. Linear Pairs ⟹ same

36. Vertical Angles
∠AFJ and ∠BFC
∠AFB and ∠JFC

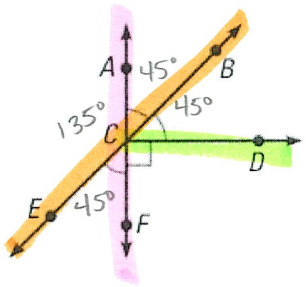
37. Acute Angles
∠FJC, ∠ICH

38. Obtuse Angles
∠FCD, ∠HCB

39. Right Angles
∠JCD, ∠ICD

40. Straight Angles
∠BCD, ∠JCJ

For questions 41-43, use the diagram.



41. Name two supplementary angles that are not a linear pair.

∠ACE (135°) and ∠BCD (45°)

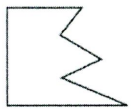
42. Name two vertical angles that are not complementary.

∠ACE and ∠BCF

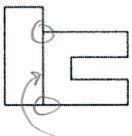
43. Name three pairs of complementary angles. Tell whether each pair contains vertical angles, adjacent angles or neither.

∠ACB and ∠BCD (Adjacent) ; ∠ACB and ∠ECF (Vertical) ; ∠BCD and ∠ECF (Neither)

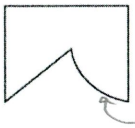
Tell whether the figure is a polygon. If it is no, explain why. If it is, tell whether it is concave or convex

44. 

Polygon; Concave

45. 

No; not a closed plane

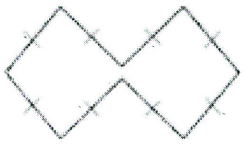
46. 

No; curved edge

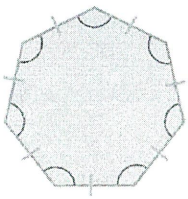
47. 

Polygon, Convex

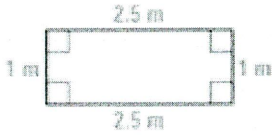
Classify the polygon by the number of sides. Tell whether it is equilateral, equiangular or regular.

48. 

Octagon; Equilateral

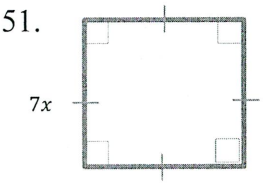
49. 

Heptagon; Regular

50. 

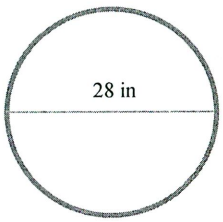
Quadrilateral; Equiangular

Find the perimeter/circumference and area

51. 

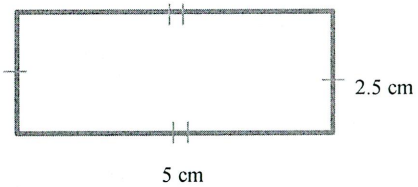
$P = 4(7x)$ $A = (7x)^2$

$P = 28x$ $A = 49x^2$

52. 

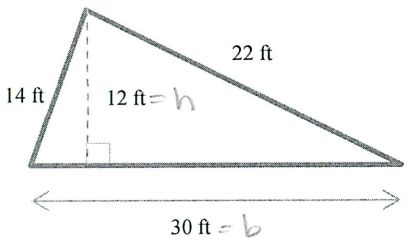
$C = 2(\pi)(14)$ $A = \pi(14)^2$

$C \approx 88$ in $A = 615.8$ in^2

53. 

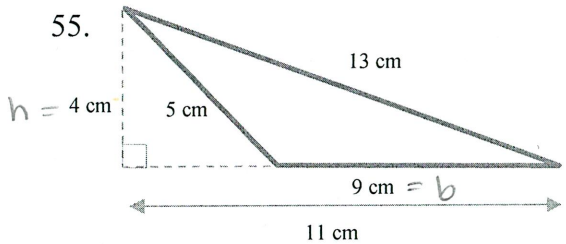
$P = 5 + 2.5 + 5 + 2.5$ $A = 5(2.5)$

$P = 15$ cm $A = 12.5$ cm^2

54. 

$P = 14 + 22 + 30$ $A = \frac{1}{2}(30)(12)$

$P = 66$ ft $A = 180$ ft^2

55. 

$P = 5 + 13 + 9$ $A = \frac{1}{2}(9)(4)$

$P = 27$ cm $A = 18$ cm^2