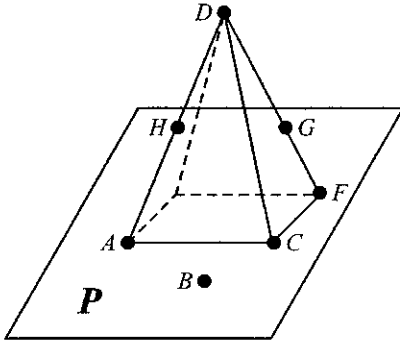


Geometry 1st Semester Final *Review*

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Are points A , C , D , and F coplanar? Explain.



- Yes; they all lie on plane P .
- No; they are not on the same line.
- Yes; they all lie on the same face of the pyramid.
- No; three lie on the same face of the pyramid and the fourth does not.

Refer to Figure 2.

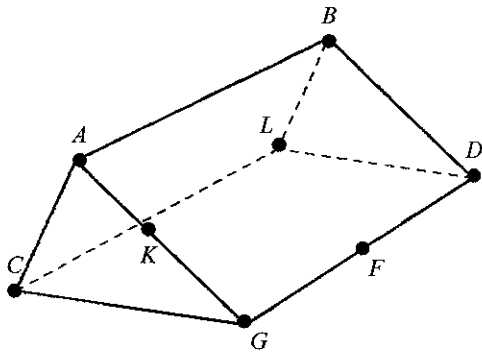


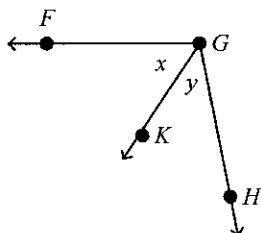
Figure 2

- ____ 2. Where could you add point M on plane LBD so that D , B , and M would be collinear?
- | | |
|--|--|
| a. anywhere on \overleftrightarrow{DF} | c. anywhere on \overleftrightarrow{BL} |
| b. anywhere on \overleftrightarrow{LD} | d. anywhere on \overleftrightarrow{BD} |

Determine whether \overleftrightarrow{WX} and \overleftrightarrow{YZ} are parallel, perpendicular, or neither.

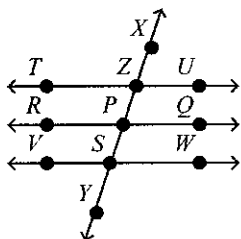
7. $W(0, -3), X(-1, 5), Y(2, 5), Z(-1, 2)$
- parallel
 - perpendicular
 - neither

In the figure, \overrightarrow{GK} bisects $\angle FGH$.



8. If $m\angle FGK = 3v - 4$ and $m\angle KGH = 2v + 7$, find x .
- | | |
|-------|-------|
| a. 33 | c. 11 |
| b. 58 | d. 29 |

9. In the figure, $m\angle RPZ = 95$ and $\overleftrightarrow{TU} \parallel \overleftrightarrow{RQ} \parallel \overleftrightarrow{VW}$. Find the measure of angle WSP .

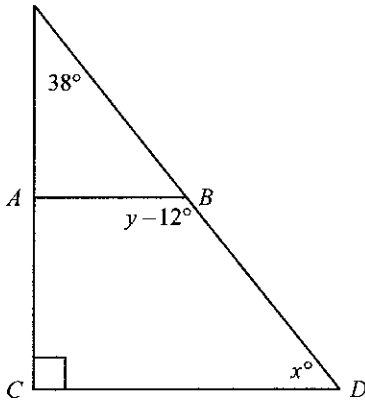


- | | |
|-------|-------|
| a. 85 | c. 95 |
| b. 75 | d. 65 |

Find the measures of the sides of $\triangle ABC$ and classify the triangle by its sides.

10. $A(5, -2), B(7, 2), C(3, 5)$
- | | |
|----------------|------------|
| a. equilateral | c. scalene |
| b. isosceles | d. obtuse |

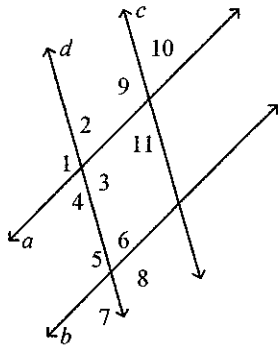
11. In the figure, $\overline{AB} \parallel \overline{CD}$. Find x and y .



- a. $x = 32, y = 140$
- b. $x = 140, y = 52$
- c. $x = 52, y = 140$
- d. $x = 38, y = 154$

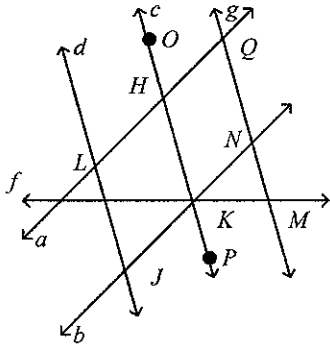
Given the following information, determine which lines, if any, are parallel. State the postulate or theorem that justifies your answer.

12. $\angle 11 \cong \angle 2$



- a. $c \parallel d$; congruent corresponding angles
- b. $a \parallel b$; congruent corresponding angles
- c. $c \parallel d$; congruent alternate interior angles
- d. $a \parallel b$; congruent alternate interior angles

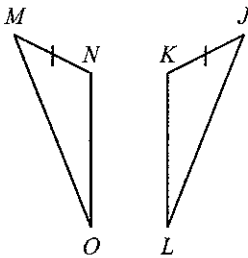
13. $\angle LHO \cong \angle NKP$



- a. $c \parallel d$; congruent corresponding angles
- b. $a \parallel b$; congruent corresponding angles
- c. $a \parallel b$; congruent alternate exterior angles
- d. $c \parallel d$; congruent alternate exterior angles

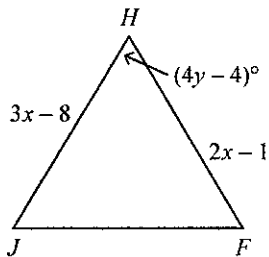
Identify the congruent triangles in the figure.

14.



- a. $\triangle KJL \cong \triangle ONM$
- b. $\triangle KJL \cong \triangle OMN$
- c. $\triangle LJK \cong \triangle OMN$
- d. $\triangle JKL \cong \triangle ONM$

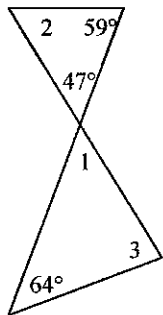
15. Triangle FJH is an equilateral triangle. Find x and y .



- a. $x = \frac{7}{5}, y = 16$
- b. $x = 7, y = 16$
- c. $x = \frac{7}{5}, y = 14$
- d. $x = 7, y = 14$

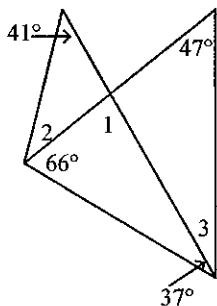
Find each measure.

____ 16. $m\angle 1$, $m\angle 2$, $m\angle 3$



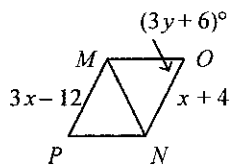
- | | |
|---|---|
| a. $m\angle 1 = 64$, $m\angle 2 = 74$, $m\angle 3 = 52$ | c. $m\angle 1 = 47$, $m\angle 2 = 74$, $m\angle 3 = 69$ |
| b. $m\angle 1 = 64$, $m\angle 2 = 47$, $m\angle 3 = 52$ | d. $m\angle 1 = 47$, $m\angle 2 = 59$, $m\angle 3 = 64$ |

____ 17. $m\angle 1$, $m\angle 2$, $m\angle 3$



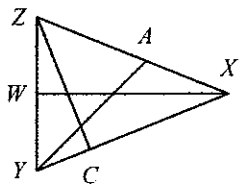
- | | |
|---|---|
| a. $m\angle 1 = 77$, $m\angle 2 = 41$, $m\angle 3 = 37$ | c. $m\angle 1 = 82$, $m\angle 2 = 41$, $m\angle 3 = 37$ |
| b. $m\angle 1 = 77$, $m\angle 2 = 36$, $m\angle 3 = 30$ | d. $m\angle 1 = 82$, $m\angle 2 = 92$, $m\angle 3 = 30$ |

____ 18. Triangles MNP and OMN are congruent equilateral triangles. Find x and y .



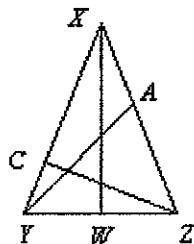
- | | |
|-----------------------|-----------------------|
| a. $x = 8$, $y = 18$ | c. $x = 4$, $y = 22$ |
| b. $x = 4$, $y = 18$ | d. $x = 8$, $y = 22$ |

19. \overline{ZC} is an altitude, $\angle CYW = 9x + 38$, and $\angle WZC = 17x$. Find $m\angle WZC$.



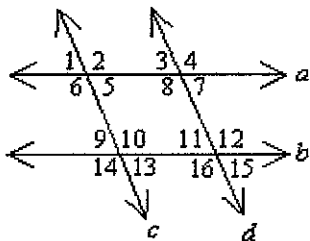
- a. 34
b. 32
c. 18
d. 31

20. \overline{XW} is an angle bisector, $\angle YXZ = 7x + 39$, $\angle WXY = 10x - 13$, and $\angle XZY = 10x$. Find $m\angle WZX$. Is \overline{XW} an altitude?



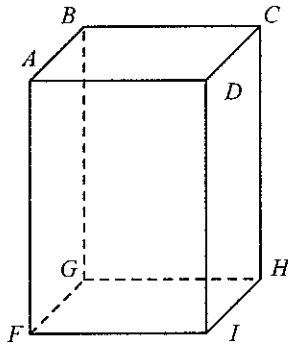
- a. 50; no
b. 32; no
c. 47; yes
d. 17.3; no

21. Which angles are corresponding angles?



- a. $\angle 8$ and $\angle 16$
b. $\angle 7$ and $\angle 8$
c. $\angle 4$ and $\angle 8$
d. none of these

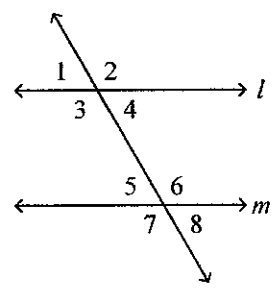
Refer to the figure below.



22. Name all segments skew to \overline{BC} .

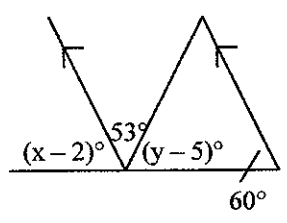
- a. $\overline{FI}, \overline{AD}, \overline{FA}, \overline{DI}$
- b. $\overline{FG}, \overline{GH}, \overline{HI}, \overline{FI}$
- c. $\overline{CD}, \overline{AB}, \overline{BG}, \overline{CH}$
- d. $\overline{GF}, \overline{HI}, \overline{DI}, \overline{AF}$

23. Find the value of the variable if $m \parallel l$, $m\angle 1 = 2x + 43$ and $m\angle 5 = 5x + 28$. The diagram is not to scale.



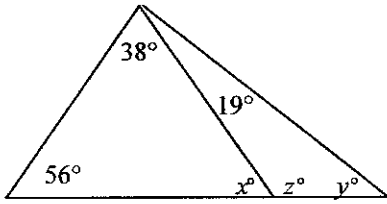
- a. 6
- b. 4
- c. -5
- d. 5

24. Find the values of x and y . The diagram is not to scale.

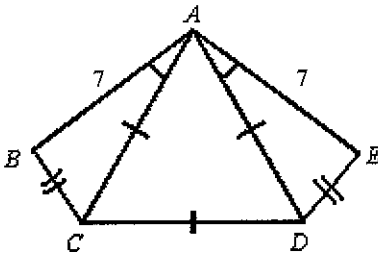


- a. $x = 72, y = 62$
- b. $x = 62, y = 72$
- c. $x = 62, y = 74$
- d. $x = 53, y = 72$

25. Find the values of x , y , and z . The diagram is not to scale.

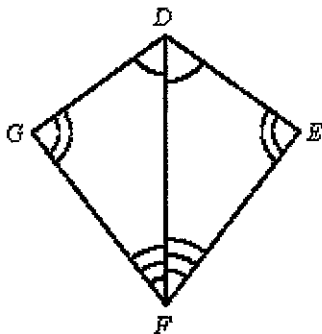


- a. $x = 86, y = 94, z = 67$
 b. $x = 67, y = 86, z = 94$
 c. $x = 67, y = 94, z = 86$
 d. $x = 86, y = 67, z = 94$
26. Classify $\triangle ABC$ by its angles, when $m\angle A = 32$, $m\angle B = 85$, and $m\angle C = 63$.
 a. right b. straight c. obtuse d. acute
27. Which two lines are parallel?
 I. $4y = 3x - 4$
 II. $4y = 2 - 3x$
 III. $4y + 3x = -1$
- a. II and III c. I and II
 b. I and III d. No, two of the lines are parallel.
28. Write an equation for the line parallel to $y = -5x - 15$ that contains $P(8, -3)$.
 a. $x = 5y - 43$
 b. $y = 5x - 43$
 c. $y = -5x + 43$
 d. $y = -5x + 37$
29. Write an equation for the line perpendicular to $y = 3x + 13$ that contains $(-7, 3)$.
 a. $y = -1/3x + 2/3$
 b. $x = 3y + 24$
 c. $y = 3x + 24$
 d. $y = -1/3x + 6$
30. State whether $\triangle ABC$ and $\triangle AED$ are congruent. Justify your answer.



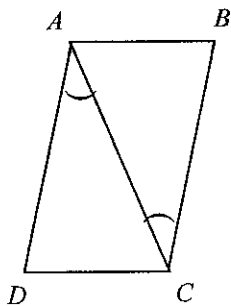
- a. yes, by either SSS or SAS
 b. yes, by SSS only
 c. yes, by SAS only
 d. No; there is not enough information to conclude that the triangles are congruent.

___ 31. From the information in the diagram, can you prove $\triangle FDG \cong \triangle FDE$? Explain.



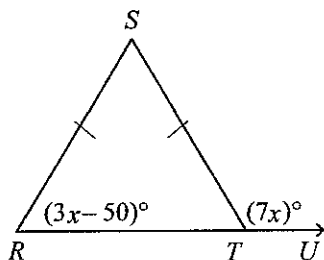
- a. yes, by ASA
- b. yes, by AAA
- c. yes, by SAS
- d. no

___ 32. What else must you know to prove the triangles congruent by ASA? By SAS?



- a. $\angle ACD \cong \angle CAB$; $\overline{AB} \cong \overline{CD}$
- b. $\angle ACD \cong \angle CAB$; $\overline{AD} \cong \overline{BC}$
- c. $\angle ADC \cong \angle CAB$; $\overline{AD} \cong \overline{BC}$
- d. $\angle ACD \cong \angle CAB$; $\overline{AD} \cong \overline{AC}$

___ 33. Find the value of x . The diagram is not to scale.

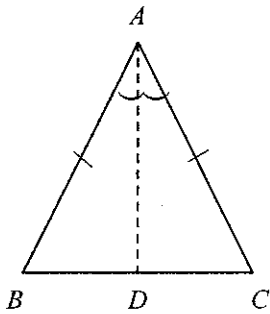


- a. $x = 23$
- b. $x = 40$
- c. $x = 13$
- d. none of these

34. Supply the reasons missing from the proof shown below.

Given: $\overline{AB} \cong \overline{AC}$, $\angle BAD \cong \angle CAD$

Prove: \overline{AD} bisects \overline{BC}



Statements	Reasons
1. $\overline{AB} \cong \overline{AC}$	1. Given
2. $\angle BAD \cong \angle CAD$	2. Given
3. $\overline{AD} \cong \overline{AD}$	3. Reflexive Property
4. $\triangle BAD \cong \triangle CAD$	4. _____ ?
5. $\overline{BD} \cong \overline{CD}$	5. _____ ?
6. \overline{AD} bisects \overline{BC}	6. Def. of segment bisector

a. ASA; CPCTC

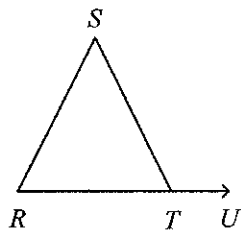
b. SAS; Reflexive Property

c. SSS; Reflexive Property

d. SAS; CPCTC

35. Find the value of x . The diagram is not to scale.

Given: $\overline{RS} \cong \overline{ST}$, $m\angle RST = 7x - 54$, $m\angle STU = 8x$



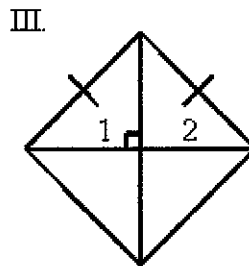
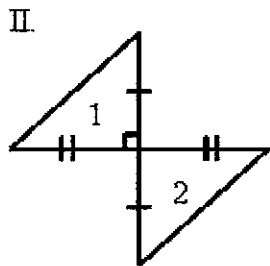
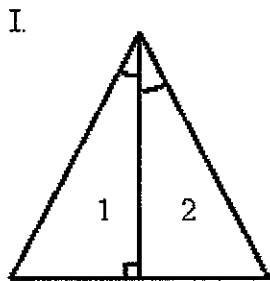
a. 14

b. 152

c. 16

d. 19

36. For which situation could you prove $\Delta 1 \cong \Delta 2$ using the HL Theorem?

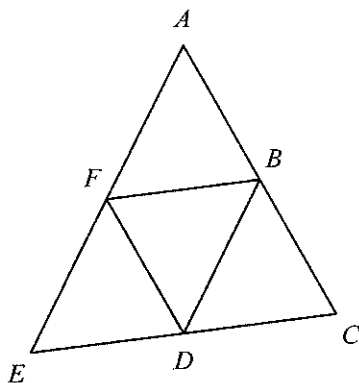


- a. I only b. II only c. III only d. II and III

37. The legs of an isosceles triangle have lengths $2x + 4$, $x + 8$. The base has length $5x - 2$. What is the length of the base?

- a. 18 c. 12
b. 4 d. cannot be determined

38. Points B , D , and F are midpoints of the sides of ΔACE . $EC = 30$ and $DF = 23$. Find AC . The diagram is not to scale.

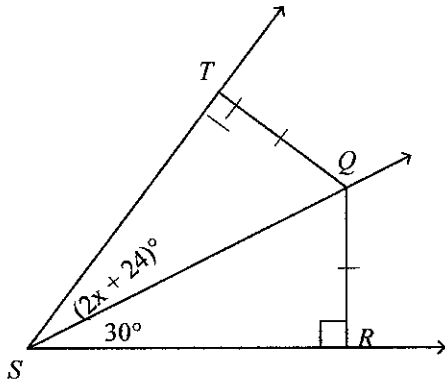


- a. 30 b. 11.5 c. 60 d. 46

Name: _____

ID: A

___ 39. Q is equidistant from the sides of $\angle TSR$. Find the value of x . The diagram is not to scale.



a. 27

b. 3

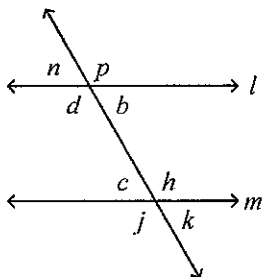
c. 15

d. 30

40. Which is a correct two-column proof?

Given: $l \parallel m$

Prove: $\angle p$ and $\angle k$ are supplementary.



a.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle d$	2. Vertical Angles
3. $\angle d$ and $\angle c$ are supplementary.	3. Same-Side Interior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle p$ and $\angle k$ are supplementary.	5. Substitution

b.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle k$	2. Corresponding Angles
3. $\angle d$ and $\angle c$ are supplementary.	3. Same-Side Exterior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle d$ and $\angle k$ are supplementary.	5. Substitution

c.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle d$	2. Vertical Angles
3. $\angle b$ and $\angle k$ are supplementary.	3. Alternate Interior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle p$ and $\angle k$ are supplementary.	5. Same-Side Interior Angles

d. none of these