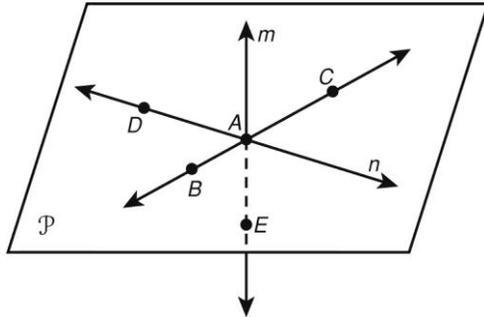


Chapter 1

Use the figure for Exercises 1–4.



1. What is another name for plane P?

- A plane AE C plane BAD
B plane A D plane BAC

2. Which segment is on line n?

- F \overline{AD} H \overline{AC}
G \overline{BC} J \overline{BE}

3. Which is the name of a ray with endpoint A?

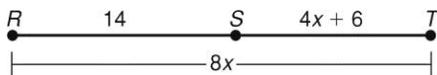
- A \overrightarrow{DA} C \overrightarrow{CA}
B \overrightarrow{BC} D \overrightarrow{AB}



4. Name the intersection of plane P and line m.

- F line n H AC
G point A J \overline{AE}

5. What is the measure of \overline{RT} ?



- A 5 C 26
B 16 D 40

$$4x + 6 + 14 = 8x$$

$$20 = 4x$$

$$x = 5$$

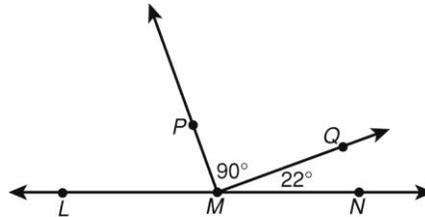
$$RT = 8x = 8(5) = 40$$

6. Given $LM = MP$ and L, M, and P are collinear, which of the following BEST describes the relationship of L, M, and P?

- F $\overline{LM} \cong \overline{MP}$ ✓
G M is the midpoint of \overline{LP} . ✓
H M bisects \overline{LP} . ✓
J All of the above



Use the figure for Exercises 7 and 8.



7. Which term describes $\angle PMQ$?

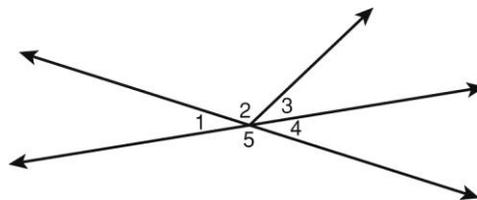
- A obtuse C right
B straight D acute

8. What is $m\angle PMN$?

- F 22° H 68°
G 90° J 112°

$$90^\circ + 22^\circ = 112^\circ$$

9. Which angles are adjacent and form a linear pair?



- A $\angle 1$ and $\angle 2$ C $\angle 2$ and $\angle 3$
B $\angle 3$ and $\angle 4$ D $\angle 1$ and $\angle 5$

10. If $m\angle A = (4x + 2)^\circ$, what is the measure of the complement of $\angle A$?

- F 90° H $(178 - 4x)^\circ$
G $(4x + 92)^\circ$ J $(88 - 4x)^\circ$

$$90^\circ - (4x + 2)^\circ$$

$$90^\circ - 4x - 2^\circ$$

$$(88 - 4x)^\circ$$

$$180^\circ - (3x - 16) = (196 - 3x)^\circ$$

11. If $m\angle B = (3x - 16)^\circ$, what is the measure of the supplement of $\angle B$?

- A 180° C $(164 - 3x)^\circ$
 B $(196 - 3x)^\circ$ D $(16 - 3x)^\circ$

12. What is the perimeter of a square whose side is 8.2 centimeters?

- F 16.4 cm H 32.8 cm^2
 G 32.8 cm J 67.24 cm^2
 $4(8.2)$

13. What is the area of a triangle with a height of 3 inches and a base of 5.5 inches? $0.5(5.5)(3)$

- A 8.25 in^2 C 16.5 in .
 B 8.5 in^2 D 16.5 in^2

14. A circle has a diameter of 8 feet. What is its approximate area? $r=4$ $A=\pi r^2$

- F 12.56 ft^2 H 50.24 ft^2 $=\pi(16)$
 G 25.12 ft^2 J 200.96 ft^2

15. Given \overline{GH} with endpoints $G(-11, 4)$ and $H(-1, -9)$, what are the coordinates of the midpoint of \overline{GH} ? $(\frac{-11-1}{2}, \frac{4-9}{2})$

- A $(-12, -5)$ C $(-10, 13)$
 B $(-6, -2.5)$ D $(-5, 6.5)$

16. M is the midpoint of \overline{RS} . R has coordinates $(-12, 4)$, and M has coordinates $(1, -2)$. What are the coordinates of S ? $(\frac{x-12}{2}, \frac{y+4}{2}) = (1, -2)$

- F $(-5.5, -1)$ H $(13, 6)$
 G $(-11, 2)$ J $(14, -8)$

17. What is the distance from $M(-1, 6)$ to $N(11, 1)$?

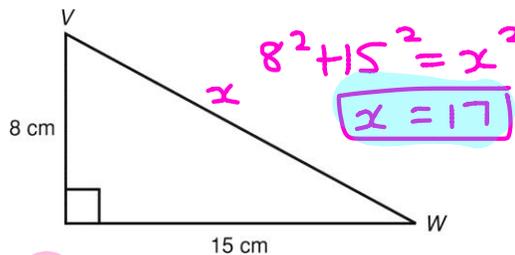
- A 12 units C 13 units
 B $\sqrt{149}$ units D 169 units

$$d = \sqrt{(-1-11)^2 + (6-1)^2}$$

$$= \sqrt{144 + 25}$$

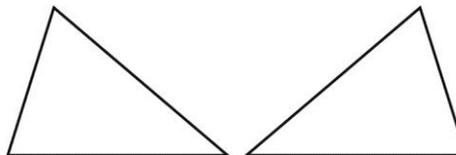
$$= \sqrt{169} = 13$$

18. What is the distance from V to W ?



- F 17 cm H 120 cm
 G 23 cm J 289 cm

19. What transformation is shown?



- A rotation C translation
 B reflection D image

20. Given a point in the coordinate plane, the rule $(x, y) \rightarrow (x + 2, y - 3)$ translates the point in which direction?

- F 2 units to the left and 3 units up
 G 3 units to the left and 2 units down
 H 3 units right and 2 units up
 J 2 units to the right and 3 units down

Chapter 2

1. What is the next item in the pattern?

-1, 2, -4, 8, ... multiply by (-2)

- A -16
- B -4
- C 4
- D 16

2. Which is a counterexample that shows that the following conjecture is false: "If $\angle 1$ and $\angle 2$ are supplementary, then one of the angles is obtuse"?

- F $m\angle 1 = 45^\circ$ and $m\angle 2 = 45^\circ$
- G $m\angle 1 = 53^\circ$ and $m\angle 2 = 127^\circ$
- H $m\angle 1 = 90^\circ$ and $m\angle 2 = 90^\circ$
- J $m\angle 1 = 100^\circ$ and $m\angle 2 = 80^\circ$

3. removed

4. Given the conditional statement "If it is January, then it is winter in the United States," which is true?

- F the converse of the conditional
- G the inverse of the conditional
- H the contrapositive of the conditional
- J Not here

5. What is the inverse of the conditional statement "If a number is divisible by 6, then it is divisible by 3"?

- A If a number is divisible by 3, then it is divisible by 6.
- B If a number is not divisible by 6, then it is not divisible by 3.
- C If a number is not divisible by 3, then it is not divisible by 6.
- D If a number is not divisible by 6, then it is divisible by 3.

6. removed

7. removed

8. Which is a biconditional statement of the conditional statement "If $x^3 = -1$, then $x = -1$ "?

- F If $x = -1$, then $x^3 = -1$.
- G $x^3 = -1$ if $x = -1$.
- H $x^3 = -1$ if and only if $x = -1$.
- J $x = -1 \rightarrow x^3 = -1$.

9. Which property is NOT used when solving $15 = 2x - 1$?

- A Reflex. Prop. of =
- B Add. Prop. of =
- C Div. Prop. of =
- D Sym. Prop. of =

$15 = 2x - 1$
 $2x - 1 = 15$ (Sym. Prop)
 $2x = 16$ (Add. Prop)
 $x = 8$ (\div Prop)

10. Identify the property that justifies the statement "If $\angle B \cong \angle A$, then $\angle A \cong \angle B$."

- F Sym. Prop. of =
- G Reflex. Prop. of =
- H Trans. Prop. of \cong
- J Sym. Prop. of \cong

Use the partially completed two-column proof for Exercises 11 and 12.

Given: $m\angle 1 = 30^\circ$ and $m\angle 2 = 2m\angle 1$.

Prove: $\angle 1$ and $\angle 2$ are complementary.

Proof:

Statements	Reasons
1. $m\angle 1 = 30^\circ$, $m\angle 2 = 2m\angle 1$	1. Given
2. $m\angle 2 = 2(30^\circ)$	2. <u>Substitution.</u>
3. $m\angle 2 = 60^\circ$	3. <u>Simplify.</u>
4. $m\angle 1 + m\angle 2 = 30^\circ + 60^\circ$	4. <u>Substitution</u>
5. $m\angle 1 + m\angle 2 = 90^\circ$	5. Simplify.
6. $\angle 1$ and $\angle 2$ are complementary.	6. Def. of comp. \sphericalangle

11. Each of the items listed below belongs in one of the blanks in the Statements column. Which belongs in Step 4?

- A $m\angle 2 = 2(30^\circ)$
- B $m\angle 1 + m\angle 2 = 90^\circ$
- C $m\angle 1 + m\angle 2 = 30^\circ + 60^\circ$**
- D $m\angle 2 = 60^\circ$

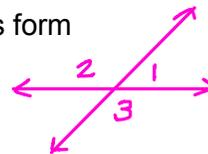
12. Which is the justification for Step 2?

- F Add. Prop. of =
- G Simplify.
- H Subst.**
- J \angle Add. Post.

Use the partially completed two-column and flowchart proofs for Exercises 13 and 14.

Given: $\angle 2 \cong \angle 3$, and $\angle 1$ and $\angle 2$ are adjacent angles whose noncommon sides form a straight line.

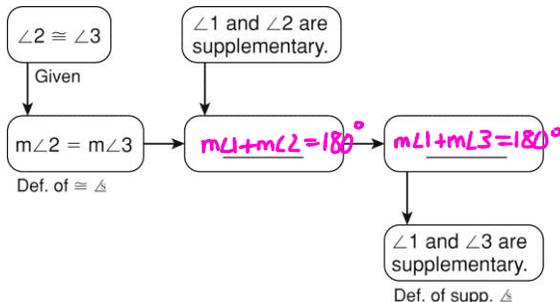
Prove: $\angle 1$ and $\angle 3$ are supplementary.



Two-Column Proof:

Statements	Reasons
1. $\angle 2 \cong \angle 3$	1. Given
2. $m\angle 2 = m\angle 3$	2. Def. of $\cong \sphericalangle$
3. $\angle 1$ and $\angle 2$ are supplementary.	3. <u>Linear Pair Postulate</u>
4. $m\angle 1 + m\angle 2 = 180^\circ$	4. Def. of supp. \sphericalangle
5. $m\angle 1 + m\angle 3 = 180^\circ$	5. <u>Substitution</u>
6. $\angle 1$ and $\angle 3$ are supplementary.	6. Def. of supp. \sphericalangle

Flowchart Proof:



13. In the flowchart proof, which belongs in the last blank box?

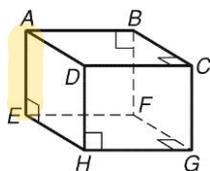
- A $m\angle 1 + m\angle 2 = 180^\circ$
- B Def. of supp. \sphericalangle
- C $m\angle 1 + m\angle 3 = 180^\circ$**
- D Subst.

14. In the flowchart proof, which theorem justifies the statement " $\angle 1$ and $\angle 2$ are supplementary"?

- F Linear Pair Theorem**
- G Congruent Supplements Theorem
- H Right Angle Congruence Theorem
- J Congruent Complements Theorem

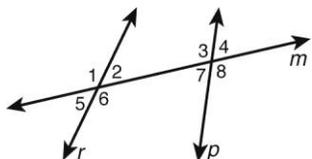
Chapter 3

Use the figure for Exercises 1 and 2.



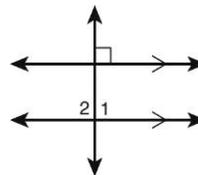
- Classify \overline{EH} and \overline{DH} .
 A skew segments
 B parallel segments
 C perpendicular segments
 D parallel planes
- How many segments are skew to \overline{AE} ?
 F 1
 G 2
 H 3
 J 4
Handwritten notes: $\overline{HG}, \overline{CD}$ and $\overline{BC}, \overline{FG}$

Use the figure for Exercises 3 and 4.



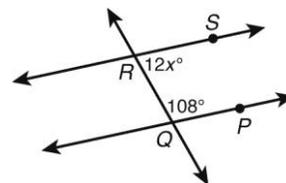
- Which are alternate exterior angles?
 A $\angle 1$ and $\angle 3$
 B $\angle 1$ and $\angle 8$
 C $\angle 3$ and $\angle 6$
 D $\angle 6$ and $\angle 7$
- Which statement is true?
 F $\angle 1$ and $\angle 2$ are alternate interior angles.
 G $\angle 1$ and $\angle 3$ are corresponding angles.
 H $\angle 3$ and $\angle 6$ are alternate exterior angles.
 J $\angle 3$ and $\angle 7$ are same-side interior angles.
- Which correctly completes the sentence?
 If two parallel lines are cut by a transversal, then the two pairs of same-side interior angles are _____.
 A supplementary
 B complementary
 C corresponding
 D congruent

6. What type of angle is $\angle 1$?



- F acute
 G right
 H obtuse
 J straight

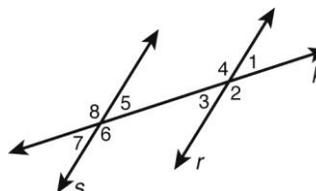
7. Given $\overline{RS} \parallel \overline{QP}$, what is the value of x ?



Handwritten work:
 $12x + 108 = 180^\circ$
 $12x = 72^\circ$
 $x = 6$

- A 6
 B 9
 C 72
 D 108

Use the figure for Exercises 8 and 9.



8. Which information proves that $r \parallel s$?

- F $\angle 1 \cong \angle 3$
 G $\angle 4 \cong \angle 5$
 H $\angle 4 \cong \angle 6$
 J $\angle 5 \cong \angle 6$

9. If $m\angle 3 = (4x + 20)^\circ$ and $m\angle 5 = (6x + 10)^\circ$, what value of x proves that $r \parallel s$?

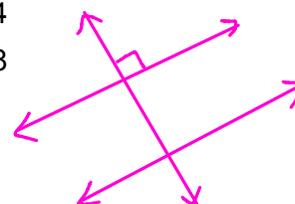
Handwritten note: $\angle 3$ & $\angle 5$ are alt. int. \angle 's. If they're $\cong \Rightarrow$ lines are \parallel .

- A 5
 B 15
 C 40
 D 100

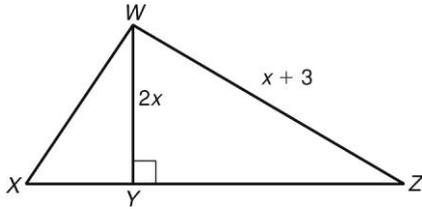
Handwritten work:
 $4x + 20 = 6x + 10$
 $10 = 2x$
 $x = 5$

10. If a transversal is perpendicular to one of two parallel lines, how many different angle measures are formed?

- F 1
 G 3
 H 4
 J 8



11. Which is a possible value of x ?



$$2x < x+3$$

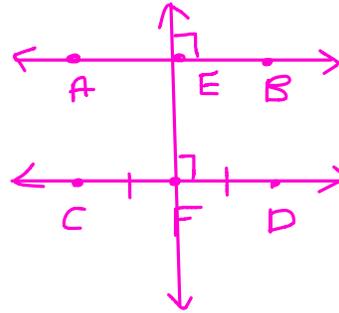
$$x < 3$$

$$2x > 0$$

$$0 < x < 3$$

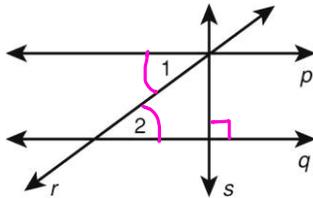
- A -2
- B 1
- C 3
- D 4

12. Given: $\overline{AB} \parallel \overline{CD}$. E is on \overline{AB} , and F is on \overline{CD} . \overline{EF} is the perpendicular bisector of \overline{CD} . What is the shortest segment from E to \overline{CD} ?



- F \overline{AF}
- G \overline{EC}
- H \overline{EF}
- J \overline{EC}

13. Which justifies Step 3?



Given: $s \perp q$ and $\angle 1 \cong \angle 2$.

Prove: $s \perp p$

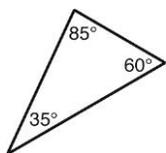
Proof:

Statements	Reasons
1. $\angle 1 \cong \angle 2, s \perp q$	1. Given
2. $p \parallel q$	2. <u>Alt. int. L's. Converse</u>
3. $s \perp p$	3. <u>\perp Transversal Thm.</u>

- A \perp Transv. Thm.
- B $p \parallel r$
- C Conv. of Alt. Int. \perp Thm.
- D 2 lines \perp to same line \rightarrow 2 lines \parallel

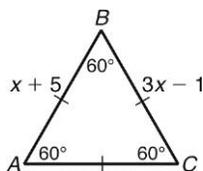
Chapter 4

1. Classify the triangle.



- A isosceles acute
- B isosceles obtuse
- C scalene acute**
- D scalene obtuse

Use the figure for Exercises 2 and 3.



$x + 5 = 3x - 1$
 $6 = 2x$
 $x = 3$
 $BC = 3x - 1 = 3(3) - 1 = 8$

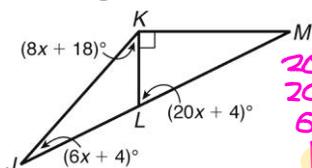
2. Which is NOT a correct classification for the triangle?

- F acute
- H isosceles
- G equiangular
- J scalene**

3. What is the length of side \overline{BC} ?

- A 3
- B 8**
- C 10
- D 24

Use the figure for Exercises 4 and 5.



Ext. \angle 's Thm:
 $20x + 4 = (6x + 4) + (8x + 18)$
 $20x + 4 = 14x + 22$
 $6x = 18$
 $x = 3$

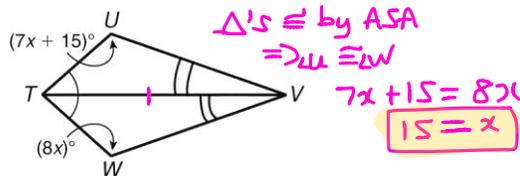
4. What is $m\angle KLM$?

- F 3
- G 22
- H 42
- J 64**

5. What is $m\angle M$?

- A 0.2
 - B 4
 - C 26**
 - D 64
- $90^\circ - 64^\circ = 26^\circ$

6. What is the $m\angle U$?



Δ 's \cong by ASA
 $\Rightarrow \angle U \cong \angle W$
 $7x + 15 = 8x$
 $15 = x$

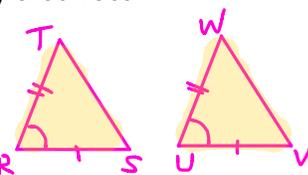
- F 5
 - G 15
 - H 40
 - J 120**
- $m\angle U = 7x + 15 = 120^\circ$

7. Two congruent triangles have the following corresponding parts:

$\overline{RS} \cong \overline{UV}$, $\overline{RT} \cong \overline{UW}$, and $\angle R \cong \angle U$.

Which is NOT necessarily a correct congruence statement?

- A $\triangle RST \cong \triangle UVW$ ✓
- B $\triangle STR \cong \triangle VWU$ ✓
- C $\triangle TRS \cong \triangle VWU$ ✗**
- D $\triangle TRS \cong \triangle WUV$ ✓

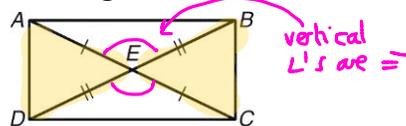


8. $\triangle KLM \cong \triangle RST$. $m\angle L = (3x + 15)^\circ$ and $m\angle S = (6x + 3)^\circ$. What is the value of x ?

$m\angle L = m\angle S$
 $3x + 15 = 6x + 3$
 $12 = 3x$
 $x = 4$

- F 2
- G 4**
- H 6
- J 27

Use the figure for Exercises 9–12.



vertical \angle 's are \cong

9. If $AD = 5y + 7$ and $BC = 7y - 3$, what must the value of y be to prove $\triangle AED \cong \triangle CEB$ by the SSS Postulate?

$AD = BC$
 $5y + 7 = 7y - 3$
 $10 = 2y$
 $y = 5$

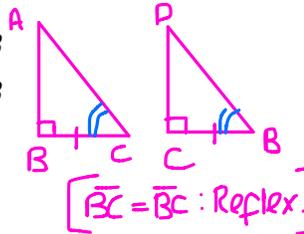
- A 2
- B 5**
- C 17
- D 32

10. What postulate or theorem justifies the congruence statement $\triangle ABE \cong \triangle CDE$?

- F SSS
- G SAS
- H ASA
- J AAS

11. If $\angle B$ and $\angle C$ are right angles, what additional congruence statement would allow you to prove $\triangle DCB \cong \triangle ABC$ by the ASA postulate?

- A $\angle DBC \cong \angle ACB$
- B $\angle BDC \cong \angle CAB$
- C $\overline{AB} \cong \overline{DC}$
- D $\overline{AC} \cong \overline{DB}$



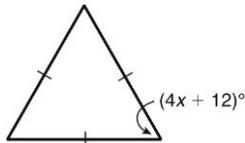
12. If $\angle A$ and $\angle C$ are right angles and $\overline{AD} \cong \overline{BC}$, what postulate or theorem justifies the congruence statement $\triangle BCD \cong \triangle DAB$?

- F SAS
- G ASA

H AAS
J HL
[BD = BD Reflexive]

13. removed
14. removed

15. What is the value of x ?



- A 12
- B 19.5
- C 18
- D 60

Equilateral Δ
 \Rightarrow All \angle 's = 60°

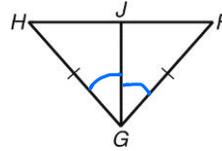
$$4x + 12 = 60$$

$$4x = 48$$

$$x = 12$$

Use the partially completed two-column proof for Exercises 16–18.

Given: \overline{GJ} bisects $\angle FGH$, $\overline{FG} \cong \overline{HG}$



Prove: $\overline{FJ} \cong \overline{HJ}$

Proof:

Statements	Reasons
1. \overline{GJ} bisects $\angle FGH$.	1. Given
2. $\angle FGJ \cong \angle HGJ$	2. Def. of \angle bisector
3. $\overline{FG} \cong \overline{HG}$	3. Given
4. $\angle F \cong \angle H$	4. <u>Base \angle's isos. Δ are \cong</u>
5. $\triangle FGJ \cong \triangle HGJ$	5. <u>ASA \cong Thm</u>
6. $\overline{FJ} \cong \overline{HJ}$.	6. <u>CPCTC</u>

16. Which reason belongs in Step 4?

- F Isosc. Δ Thm.
- G Conv. of Isosc. Δ Thm.
- H ASA
- J Def. of \angle bisector

17. Which reason belongs in Step 5?

- A Isosc. Δ Thm. C CPCTC
- B ASA D HL

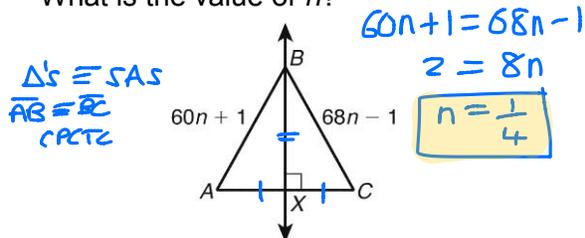
18. Which reason belongs in Step 6?

- F Isosc. Δ Thm.
- G ASA
- H CPCTC
- J Def. of \angle bisector

Chapter 5

1. \overline{BX} is the perpendicular bisector of \overline{AC} .

What is the value of n ?

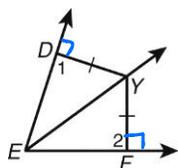


- A 0
- B $\frac{1}{4}$
- C 4
- D Not here

2. Which point is on the perpendicular bisector of the segment with endpoints $(-2, 5)$ and $(-2, -3)$?

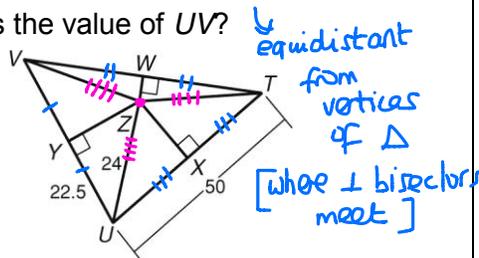
- F $(-2, 8)$
 - G $(-2, 4)$
 - H $(-2, 1)$
 - J $(1, -2)$
- Handwritten notes: midpoint = $(\frac{-2-2}{2}, \frac{5-3}{2}) = (-2, 1)$

3. What information is sufficient to allow you to conclude that Y is on the bisector of $\angle E$?



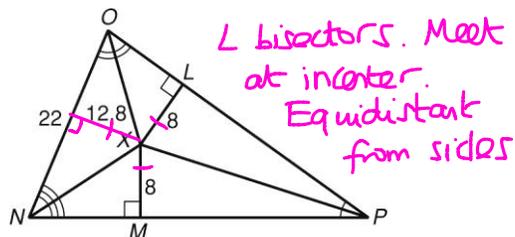
- A $m\angle 1 = 90^\circ$
- B $m\angle 2 = 90^\circ$
- C $m\angle 1 = 90^\circ$ and $m\angle 2 = 90^\circ$
- D $m\angle FYE + m\angle DYE = 90^\circ$

4. Point Z is the circumcenter of $\triangle TUV$. What is the value of UV ?



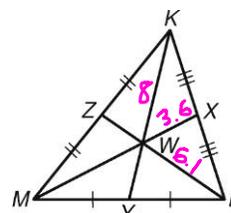
- F 33.75
 - G 45
 - H 50
 - J Not here
- Handwritten note: $2(22.5)$

5. What is the distance from X to \overline{ON} ?



- A 8
- B 12.8
- C 11
- D 12

6. If $WX = 3.6$, $WL = 6.1$, and $KW = 8$, what is the value of ZW ?

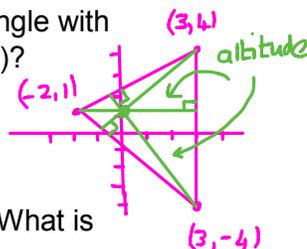


- F 3.05
- G 3.6
- H 4
- J 4.06

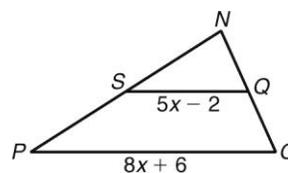
Handwritten notes: $ZW = \frac{1}{3}(6.1) = 3.05$

7. Which is the orthocenter of a triangle with vertices $(-2, 1)$, $(3, 4)$, and $(3, -4)$?

- A $(0, 1)$
- B $(1, 0)$
- C $(6, 1)$
- D $(8, 1)$



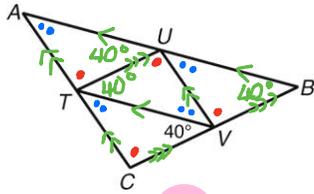
8. \overline{SQ} is a midsegment of $\triangle NOP$. What is the length of \overline{OP} ?



- F 5
- G 14
- H 23
- J 46

Handwritten notes: $OP = 2(SQ)$
 $8x+6 = 10x-4$
 $10 = 2x$
 $x = 5$
 $OP = 8x+6 = 8(5)+6 = 46$

9. $\triangle TUV$ is the midsegment triangle of $\triangle ABC$. Which angle does NOT necessarily measure 40° ?



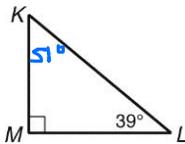
- A $\angle VTU$ ✓ C $\angle CTV$ ✗
 B $\angle TUA$ ✓ D $\angle VBU$ ✓

10. removed

11. The lengths of two sides of a triangle are 7 and 11. Which could NOT be the length of the third side?

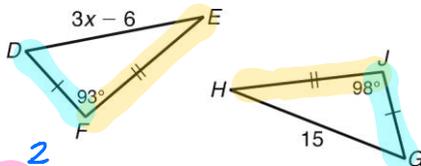
- A 5 ✓ C 12 ✓
 B 10 ✓ D 19 ✗

12. Which statement is false?



- F $\triangle KLM$ is scalene. ✓
 G $ML + KM > KL$ ✓ [sum 2 smaller sides > 3rd side]
 H $m\angle L < m\angle K$ ✓
 J $KM > ML$ ✗ [KM smallest side - opposite smallest angle]

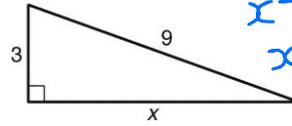
13. Which best describes the range of values for x ?



- * A $0 < x < 7$ C $x < 15$
 B $0 < x < 15$ D $6 < x < 7$

$3x - 6 < 15$ & $3x - 6 > 0$
 $3x < 21$ $3x > 6$
 $x < 7$ $x > 2$
 $2 < x < 7$

14. What is the value of x in simplest radical form?



$x^2 + 3^2 = 9^2$
 $x^2 = 81 - 9 = 72$
 $x = \sqrt{72}$
 $= \sqrt{36 \cdot 2}$
 $= 6\sqrt{2}$

- F $3\sqrt{12}$ H $\sqrt{72}$
 G $6\sqrt{2}$ J $\sqrt{89}$

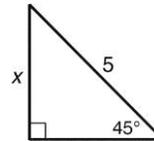
15. Which numbers form a Pythagorean triple?

- A 3, 4, 6 ✗ C 9, 12, 15 $9^2 + 12^2 = 15^2$
 B 7, $6\sqrt{2}$, 11 ✗ D 8, 15, 18 ✗ $8^2 + 15^2 \neq 18^2$
 ↑ must be integer

16. Which side length will form an obtuse triangle with sides of length 8 and 10?

- RT \triangle F 6, 8, 10 H 12, 8, 10, 12 $8^2 + 10^2 > 12^2$ Acute
 $64 + 100 > 144$
 G 9, 8, 9, 10 J 13, 8, 10, 13 $8^2 + 9^2 > 10^2$ Acute
 $164 < 169$ ⇒ OBTUSE

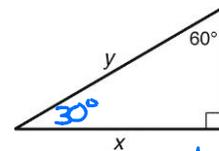
17. What is the value of x in simplest radical form?



$45 - 45 - 90^\circ$
 $1 : 1 : \sqrt{2}$
 $\frac{5}{\sqrt{2}} = \frac{5\sqrt{2}}{2}$

- A 2.5 C $\frac{5\sqrt{2}}{2}$
 B $\frac{5}{\sqrt{2}}$ D $5\sqrt{2}$

18. Which is a correct set of values?

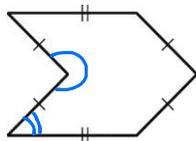


$30^\circ - 60^\circ - 90^\circ$
 $1 : \sqrt{3} : 2$
 $z : x : y$

- ✗ F $x = 27, y = 9\sqrt{3}, z = 18\sqrt{3}$ $y = 18\sqrt{3}$
 G $x = 27, y = 18\sqrt{3}, z = 9\sqrt{3}$
 H $x = 9\sqrt{3}, y = 27, z = 18\sqrt{3}$ If $y = 27, z = \frac{27}{2} x$
 J $x = 18\sqrt{3}, y = 9\sqrt{3}, z = 27$ If $z = 27, y = 54 x$

Chapter 6

1. Which term does NOT describe the figure?



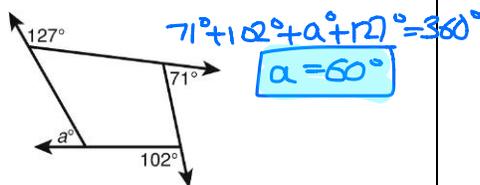
- A concave
B hexagon
C polygon
D regular

2. What is the sum of the measures of the interior angles of a 5-sided convex polygon?

- A 72
B 360
C 540
D 900

$(5-2)180^\circ$

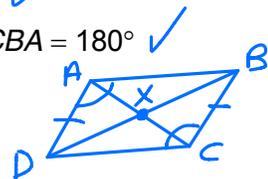
3. What is the value of a ?



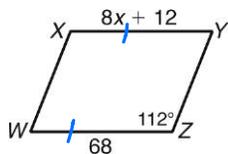
- A 60
B 80

4. The diagonals of $\square ABCD$ intersect at X . Which is NOT true?

- A $\angle DAB \cong \angle BCD$ ✓
B $m\angle DAB + m\angle CBA = 180^\circ$ ✓
C $\overline{BC} \cong \overline{AD}$ ✓
D $\overline{AX} \cong \overline{XB}$ ✗



Use the figure for Exercises 5 and 6.



5. $WXYZ$ is a parallelogram. Which is $m\angle W$?

- A 68°
B 112°

$180^\circ - 112^\circ = 68^\circ$

6. $WXYZ$ is a parallelogram. What is the value of x ?

- A 7
B 10

$8x + 12 = 68$
 $8x = 56$
 $x = 7$

7. Which MUST be a parallelogram?

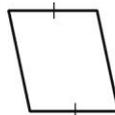


Figure 1

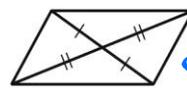
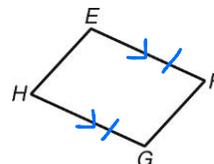


Figure 2

diagonals bisect each other \Rightarrow p'ogram

- A Figure 1
B Figure 2

8. If $\overline{EF} \parallel \overline{GH}$, what additional information would allow you to conclude that $EFGH$ is a parallelogram?

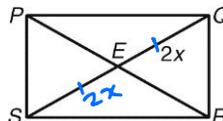


- A $\overline{EF} \cong \overline{GH}$
B $\overline{FG} \cong \overline{EH}$

9. Which is NOT always true?

- A A square is a rhombus. ✓
B A rectangle is a parallelogram. ✓
C A rhombus is a rectangle. ✗ [only if it's a square]
D A square is a rectangle. ✓

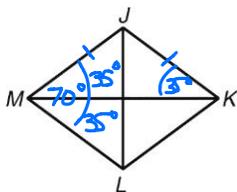
10. $PQRS$ is a rectangle. $PR = 26$. What is the value of x ?



diagonals \cong
 $\Rightarrow 4x = 26$
 $x = 6.5$

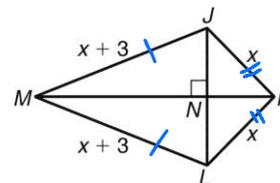
- A 6.5
B 13

11. $JKLM$ is a rhombus. If $m\angle JML = 70^\circ$, what is the value of $m\angle JKM$?

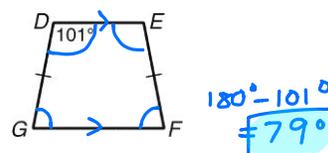


- A 35°
 - B 55°
 - C 70°
 - D 110°
12. removed
13. removed

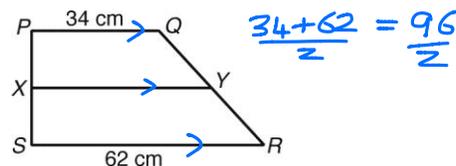
14. Which best describes the figure?



- A kite
 - B parallelogram
 - C quadrilateral
 - D trapezoid
15. What is $m\angle F$ in the isosceles trapezoid?



- A 79°
 - B 101°
16. In trapezoid $PQRS$, what is the length of midsegment \overline{XY} ?



- A 48 cm
- B 51 cm