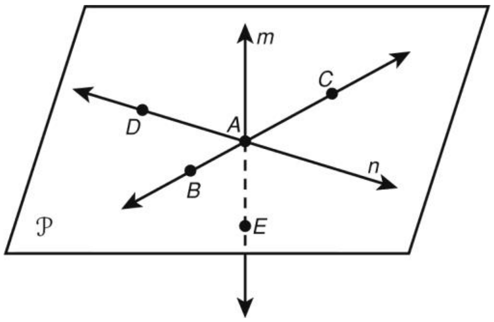
Geometry XL
Ms. Doherty
Semester 1 Final Exam Review Name ______________________________ per. _____

Chapter 1

Use the figure for Exercises 1–4.



1. What is another name for plane $\mathcal{P}$?
   A plane *AE* C plane *BAD*
   B plane *A* D plane *BAC*

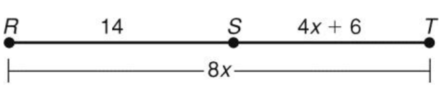
2. Which segment is on line *n*?
   F $\overline{AD}$ H $\overline{AC}$
   G $\overline{BC}$ J $\overline{BE}$

3. Which is the name of a ray with endpoint *A*?
   A $\overrightarrow{DA}$ C $\overrightarrow{CA}$
   B $\overrightarrow{BC}$ D $\overrightarrow{AB}$

A
ENDPOINT

4. Name the intersection of plane $\mathcal{P}$ and line *m*.
   F line *n* H *AC*
   G point *A* J $\overline{AE}$

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



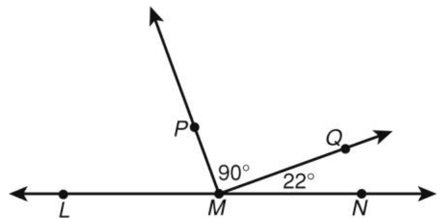
   A 5 C 26
   B 16 D 40

$4x + 6 + 14 = 8x$
$20 = 4x$
$\boxed{x = 5}$
$RT = 8x = 8(5) = \boxed{40}$

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

L M P

Use the figure for Exercises 7 and 8.

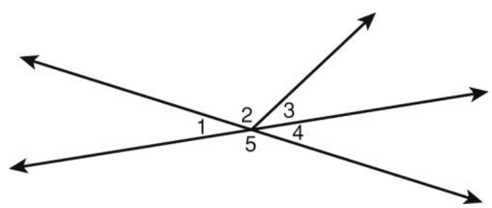


7. Which term describes ∠*PMQ*?
   A obtuse C right
   B straight D acute

8. What is m∠*PMN*?
   F 22° H 68°
   G 90° J 112°

$90° + 22° = \boxed{112°}$

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



   A ∠1 and ∠2 C ∠2 and ∠3
   B ∠3 and ∠4 D ∠1 and ∠5

10. If m∠*A* = $(4x + 2)°$, what is the measure of the complement of ∠*A*?
   F 90° H $(178 - 4x)°$
   G $(4x + 92)°$ J $(88 - 4x)°$

$90° - (4x + 2)°$
$90° - 4x - 2°$
$(88 - 4x)°$

$180° - (3x-16) = \boxed{(196-3x)°}$

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

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

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? $r=4$ $A=\pi r^2$ $=\pi(16)$

    F 12.56 ft^2 H 50.24 ft^2
    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 $\overline{GH}$? $\left(\frac{-11-1}{2}, \frac{4-9}{2}\right)$

    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?

    (x,y) S
    $(1,-2)$ M
    $R(-12,4)$

    $\left(\frac{x-12}{2}, \frac{y+4}{2}\right) = (1,-2)$

    $\frac{x-12}{2} = 1$
    $x = \boxed{14}$

    $\frac{y+4}{2} = -2$
    $y = \boxed{-8}$

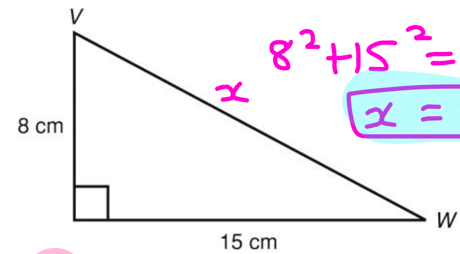
    F $(-5.5, -1)$ H $(13, 6)$
    G $(-11, 2)$ J $(14, -8)$

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

$d = \sqrt{(-1-11)^2 + (6-1)^2}$
$= \sqrt{144 + 25}$
$= \sqrt{169} = \boxed{13}$

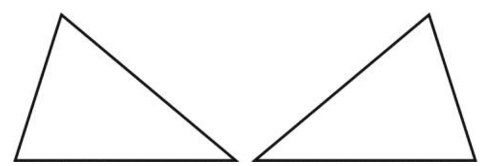
18. What is the distance from V to W?



$8^2 + 15^2 = x^2$
$\boxed{x = 17}$

    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?

$-1, 2, -4, 8, \ldots$ multiply by (-2)

A -16 C 4

B -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 $m\angle 1 = 45°$ and $m\angle 2 = 45°$

G $m\angle 1 = 53°$ and $m\angle 2 = 127°$

H $m\angle 1 = 90°$ and $m\angle 2 = 90°$

J $m\angle 1 = 100°$ and $m\angle 2 = 80°$

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 $15 = 2x - 1$?

$15 = 2x - 1$

$2x - 1 = 15$ (Sym. Prop)

$2x = 16$ (Add. Prop)

$x = 8$ ($\div$ Prop)

A Reflex. Prop. of $=$

B Add. Prop. of $=$

C Div. Prop. of $=$

D Sym. Prop. of $=$

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: $m\angle 1 = 30°$ and $m\angle 2 = 2m\angle 1$.

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

Proof:

Statements	Reasons
1. $m\angle 1 = 30°$, $m\angle 2 = 2m\angle 1$	1. Given
2. $m\angle 2 = 2(30°)$	2. Substitution.
3. $m\angle 2 = 60°$	3. Simplify.
4. $m\angle 1 + m\angle 2 = 30° + 60°$	4. Substitution
5. $m\angle 1 + m\angle 2 = 90°$	5. Simplify.
6. $\angle 1$ and $\angle 2$ are complementary.	6. Def. of comp. $\angle$s

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

   A $m\angle 2 = 2(30°)$

   B $m\angle 1 + m\angle 2 = 90°$

   C $m\angle 1 + m\angle 2 = 30° + 60°$

   D $m\angle 2 = 60°$

12. Which is the justification for Step 2?

   F Add. Prop. of =

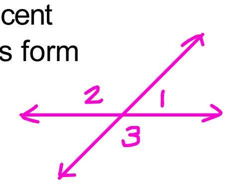
   G Simplify.

   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 $\cong$ $\angle$s
3. $\angle 1$ and $\angle 2$ are supplementary.	3. Linear Pair Postulate
4. $m\angle 1 + m\angle 2 = 180°$	4. Def. of supp. $\angle$s
5. $m\angle 1 + m\angle 3 = 180°$	5. Substitution
6. $\angle 1$ and $\angle 3$ are supplementary.	6. Def. of supp. $\angle$s

Flowchart Proof:

$\angle 2 \cong \angle 3$ — Given

$\angle 1$ and $\angle 2$ are supplementary.

$m\angle 2 = m\angle 3$ — Def. of $\cong$ $\angle$s

$m\angle 1 + m\angle 2 = 180°$

$m\angle 1 + m\angle 3 = 180°$

$\angle 1$ and $\angle 3$ are supplementary. — Def. of supp. $\angle$s

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

   A $m\angle 1 + m\angle 2 = 180°$

   B Def. of supp. $\angle$s

   C $m\angle 1 + m\angle 3 = 180°$

   D Subst.

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

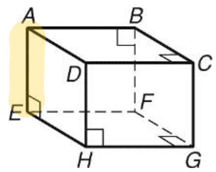
   F Linear Pair Theorem

   G Congruent Supplements Theorem

   H Right Angle Congruence Theorem

   J Congruent Complements Theorem

Use the figure for Exercises 1 and 2.

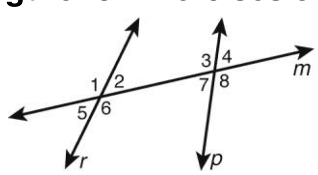


1. Classify $\overline{EH}$ and $\overline{DH}$.
   - A skew segments
   - B parallel segments
   - C perpendicular segments
   - D parallel planes

2. How many segments are skew to $\overline{AE}$?
   - F 1
   - H 3
   - G 2
   - J 4

   HG, $\overline{CD}$
   BC, FG

Use the figure for Exercises 3 and 4.

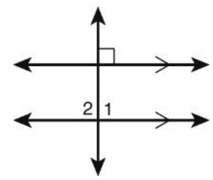


3. Which are alternate exterior angles?
   - A ∠1 and ∠3
   - C ∠3 and ∠6
   - B ∠1 and ∠8
   - D ∠6 and ∠7

4. Which statement is true?
   - F ∠1 and ∠2 are alternate interior angles.
   - G ∠1 and ∠3 are corresponding angles.
   - H ∠3 and ∠6 are alternate exterior angles.
   - J ∠3 and ∠7 are same-side interior angles.

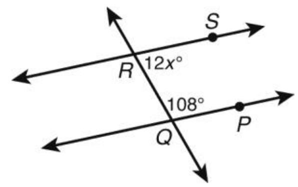
5. Which correctly completes the sentence? If two parallel lines are cut by a transversal, then the two pairs of same-side interior angles are __________.
   - A supplementary
   - B complementary
   - C corresponding
   - D congruent

6. What type of angle is ∠1?



   - F acute
   - H obtuse
   - G right
   - J straight

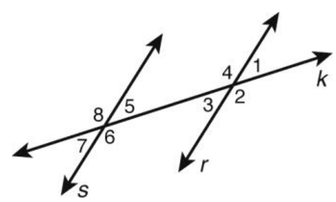
7. Given $\overleftrightarrow{RS} \parallel \overleftrightarrow{QP}$, what is the value of x?



$12x + 108 = 180°$
$12x = 72°$
$\boxed{x = 6}$

   - A 6
   - C 72
   - B 9
   - D 108

Use the figure for Exercises 8 and 9.



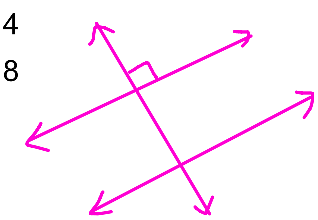
8. Which information proves that $r \parallel s$?
   - F $\angle 1 \cong \angle 3$
   - H $\angle 4 \cong \angle 6$
   - G $\angle 4 \cong \angle 5$
   - J $\angle 5 \cong \angle 6$

9. If $m\angle 3 = (4x + 20)°$ and $m\angle 5 = (6x + 10)°$, what value of x proves that $r \parallel s$?
   - A 5
   - C 40
   - B 15
   - D 100

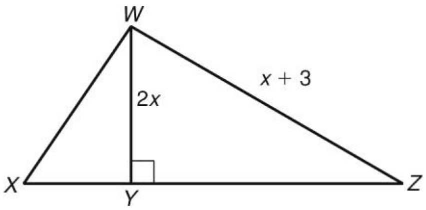
∠3 & ∠5 are alt. int ∠'s. If they're ≅ ⇒ lines are ∥.

$4x + 20 = 6x + 10$
$10 = 2x$
$\boxed{x = 5}$

10. If a transversal is perpendicular to one of two parallel lines, how many different angle measures are formed?
   - F 1 (all 90°)
   - H 4
   - G 3
   - J 8



11. Which is a possible value of x?



$2x < x+3$

$x < 3$

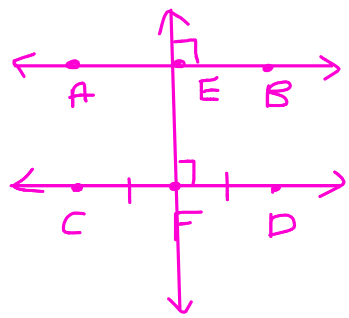
$2x > 0$

$\boxed{0 < x < 3}$

A -2 C 3

B 1 D 4

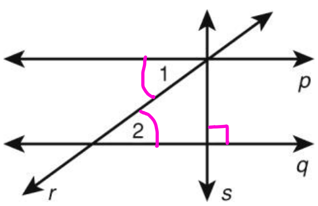
12. Given: $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$. E is on $\overleftrightarrow{AB}$, and F is on $\overleftrightarrow{CD}$. $\overleftrightarrow{EF}$ is the perpendicular bisector of $\overline{CD}$. What is the shortest segment from E to $\overleftrightarrow{CD}$?



F $\overline{AF}$ H $\overline{EF}$

G $\overline{EC}$ 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. Alt. int. ∠'s. Converse
3. $s \perp p$	3. ⊥ Transversal Thm.

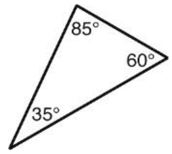
A ⊥ Transv. Thm.

B $p \parallel r$

C Conv. of Alt. Int. ∠s Thm.

D 2 lines ⊥ to same line → 2 lines ∥

1.Classify the triangle.



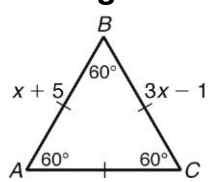
A isosceles acute

B isosceles obtuse

C scalene acute

D scalene obtuse

Use the figure for Exercises 2 and 3.



$x+5=3x-1$
$6=2x$
$x=3$
$BC=3x-1$
$=3(3)-1=\boxed{8}$

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

F acute   H isosceles

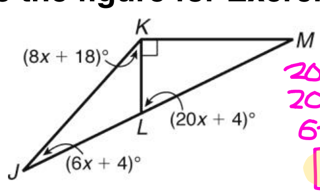
G equiangular   J scalene

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

A 3   C 10

B 8   D 24

Use the figure for Exercises 4 and 5.



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

4. What is m∠*KLM*? $=20x+4$

F 3   H 42 $=20(3)+4$

G 22   J 64 $=\boxed{64°}$

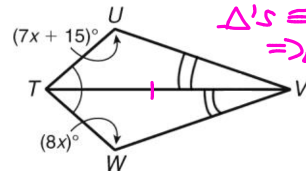
5. What is m∠*M*?

A 0.2   C 26

B 4   D 64

$90°-64°$
$=\boxed{26°}$

6. What is the m∠*U*?



Δ's ≅ by ASA
⇒∠U ≅ ∠W
$7x+15=8x$
$\boxed{15=x}$

F 5   H 40

G 15   J 120

$m\angle U=7x+15$
$=\boxed{120°}$

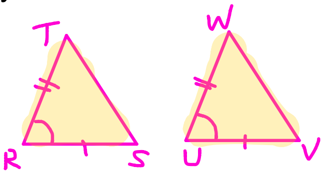
7. Two congruent triangles have the following corresponding parts:
$\overline{RS}\cong\overline{UV}$, $\overline{RT}\cong\overline{UW}$, and $\angle R\cong\angle U$.
Which is NOT necessarily a correct congruence statement?

A △*RST* ≅ △*UVW* ✓

B △*STR* ≅ △*VWU* ✓

C △*TRS* ≅ △*VWU* ×

D △*TRS* ≅ △*WUV* ✓



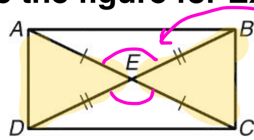
8. △*KLM* ≅ △*RST*. m∠*L* = (3*x* + 15)° and m∠*S* = (6*x* + 3)°. What is the value of *x*?

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

F 2   H 6

G 4   J 27

Use the figure for Exercises 9–12.



vertical ∠'s are ≅

9. If *AD* = 5*y* + 7 and *BC* = 7*y* − 3, what must the value of *y* be to prove △*AED* ≅ △*CEB* by the SSS Postulate?

$AD=BC$
$5y+7=7y-3$
$10=2y$
$\boxed{y=5}$

A 2   C 17

B 5   D 32

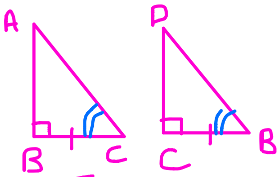
10. What postulate or theorem justifies the congruence statement △*ABE* ≅ △*CDE*?

F SSS   H ASA

G SAS   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 $\overline{AC} \cong \overline{DB}$

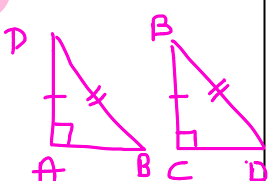


$\boxed{\overline{BC} = \overline{BC} : \text{Reflex.}}$

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

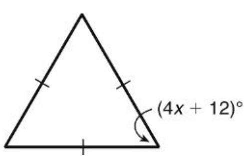
$\boxed{\overline{BD} \cong \overline{BD} \text{ Reflexive}}$



13. removed

14. removed

15. What is the value of x?



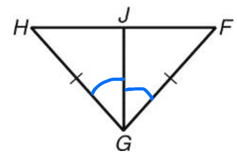
Equilateral Δ
$\Rightarrow$ All $\angle$'s $= 60°$

A 12
B 19.5
C 18
D 60

$4x + 12 = 60$
$4x = 48$
$\boxed{x = 12}$

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. Base $\angle$'s isos. Δ are $\cong$
5. $\Delta FGJ \cong \Delta HGJ$	5. ASA $\cong$ Thm
6. $\overline{FJ} \cong \overline{HJ}$.	6. CPCTC

16. Which reason belongs in Step 4?

F Isosc. $\triangle$ Thm.
G Conv. of Isosc. $\triangle$ Thm.
H ASA
J Def. of $\angle$ bisector

17. Which reason belongs in Step 5?

A Isosc. $\triangle$ Thm.
B ASA
C CPCTC
D HL

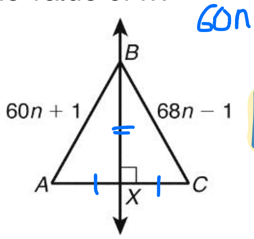
18. Which reason belongs in Step 6?

F Isosc. $\triangle$ 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?

Δ's $\cong$ SAS
$\overline{AB} \cong \overline{BC}$
CPCTC



$60n+1=68n-1$
$2=8n$
$\boxed{n=\frac{1}{4}}$

A 0 C 4

B $\frac{1}{4}$ D Not here

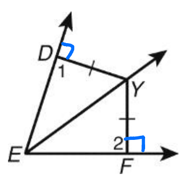
2. Which point is on the perpendicular bisector of the segment with endpoints (–2, 5) and (–2, –3)?

F (–2, 8) H (–2, 1)

G (–2, 4) J (1, –2)

midpoint = $\left(\frac{-2-2}{2}, \frac{5-3}{2}\right)$ $= \boxed{(-2, 1)}$

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



A m$\angle$1 = 90°

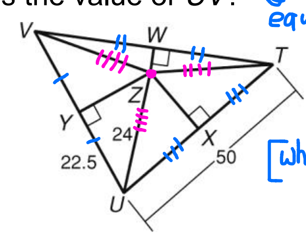
B m$\angle$2 = 90°

C m$\angle$1 = 90° and m$\angle$2 = 90°

D m$\angle FYE$ + m$\angle DYE$ = 90°

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

equidistant from vertices of Δ
[where ⊥ bisectors meet]

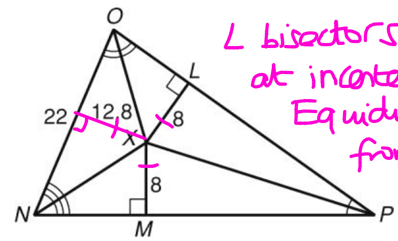


F 33.75 H 50

G 45 J Not here

2(22.5)

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

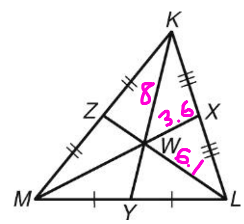


⊥ bisectors. Meet at incenter. Equidistant from sides

A 8 C 11

B 12.8 D 12

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



W = centroid.
where medians meet
$ZW = \frac{1}{2}(6.1)$
$= \boxed{3.05}$

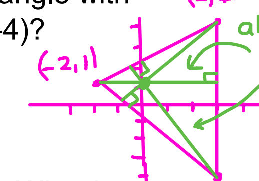
F 3.05 H 4

G 3.6 J 4.06

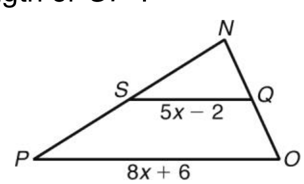
7. Which is the orthocenter of a triangle with vertices (–2, 1), (3, 4), and (3, –4)?

A (0, 1) C (6, 1)

B (1, 0) D (8, 1)



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

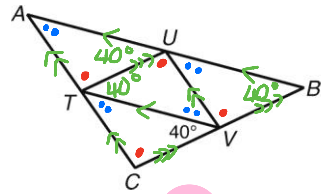


$OP = 2(SQ)$
$8x+6=10x-4$
$10=2x$
$\boxed{x=5}$
$OP = 8x+6$
$= 8(5)+6$
$= \boxed{46}$

F 5 H 23

G 14 J 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?

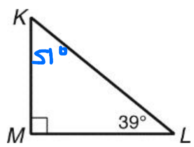
11−7 ↓ diff 11+7 ↓ sum

$4 < 3^{rd}\text{ side} < 18$

A 5 ✓ C 12 ✓

B 10 ✓ D 19 ×

12. Which statement is false?



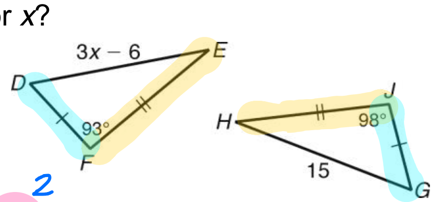
F $\triangle KLM$ is scalene. ✓

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 (2) C $x < 15$

B $0 < x < 15$ D $6 < x < 7$

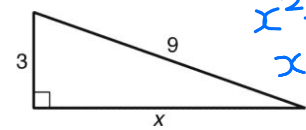
$3x - 6 < 15$ & $3x - 6 > 0$

$3x < 21$ $3x > 6$

$\boxed{x < 7}$ $\boxed{x > 2}$

$2 < x < 7$

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



$x^2 + 3^2 = 9^2$

$x^2 = 81 - 9 = 72$

$x = \sqrt{72}$

$= \sqrt{36 \cdot 2}$

$= \boxed{6\sqrt{2}}$

F $3\sqrt{12}$ H $\sqrt{72}$

G $6\sqrt{2}$ J $\sqrt{89}$

15. Which numbers form a Pythagorean triple? $3^2 + 4^2 \neq 6^2$ $3(3,4,5)$

A 3, 4, 6 × C 9, 12, 15 $9^2 + 12^2 = 15^2$

B 7, $6\sqrt{2}$, 11 × D 8, 15, 18 × $8^2 + 15^2 \neq 18^2$

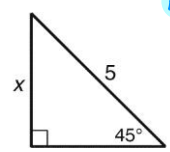
↑must be integer

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

[Rt. Δ] F 6 6, 8, 10 H 12 8, 10, 12 $8^2 + 10^2 > 12^2$ [Acute] $64 + 100 > 144$

G 9 8, 9, 10 $8^2 + 9^2 > 10^2 \Rightarrow$ [Acute] J 13 8, 10, 13 $164 < 169 \Rightarrow$ [OBTUSE]

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



45°–45°–90°

$1 : 1 : \sqrt{2}$

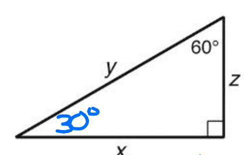
5 ÷√2

$\frac{5}{\sqrt{2}} = \boxed{\frac{5\sqrt{2}}{2}}$

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°–60°–90°

$1 : \sqrt{3} : 2$

$z : x : y$

If $x = 27$, $z = \frac{27}{\sqrt{3}} = \frac{27\sqrt{3}}{3} = \boxed{9\sqrt{3}}$

$\boxed{y = 18\sqrt{3}}$

× F $x = 27$, $y = 9\sqrt{3}$, $z = 18\sqrt{3}$

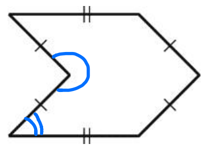
G $x = 27$, $y = 18\sqrt{3}$, $z = 9\sqrt{3}$

H $x = 9\sqrt{3}$, $y = 27$, $z = 18\sqrt{3}$ If $y = 27$, $z = \frac{27}{2}$ ×

J $x = 18\sqrt{3}$, $y = 9\sqrt{3}$, $z = 27$ If $z = 27$, $y = 54$ ×

Chapter 6

1. Which term does NOT describe the figure?



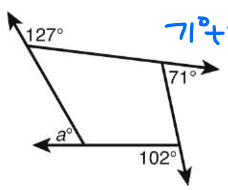
A concave
B hexagon
C polygon
D regular

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

$(5-2)180°$

A 72
B 360
C 540
D 900

3. What is the value of *a*?



$71°+102°+a°+127°=360°$

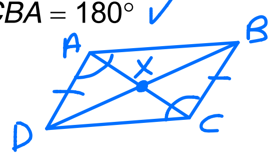
$\boxed{a=60°}$

A 60
B 80

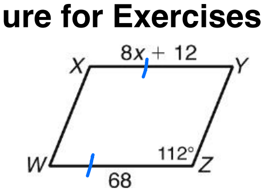
p'ogram

4. The diagonals of ▱ *ABCD* intersect at *X*. Which is NOT true?

A $\angle DAB \cong \angle BCD$ ✓
B $m\angle DAB + m\angle CBA = 180°$ ✓
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°

$180° - 112° = \boxed{68°}$

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

A 7
B 10

$8x+12=68$
$8x=56$
$\boxed{x=7}$

7. Which MUST be a parallelogram?

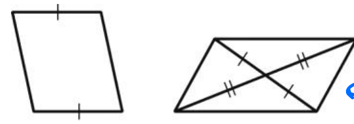
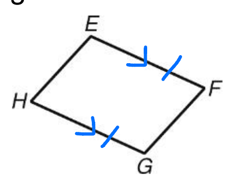


Figure 1 Figure 2

diagonals bisect each other
⇒ 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?

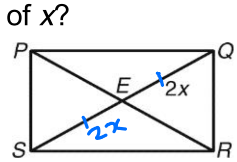


A $\overline{EF} \cong \overline{GH}$
B $\overline{FG} \cong \overline{EH}$

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. ✓

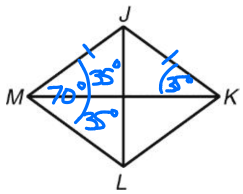
10. *PQRS* is a rectangle. $PR = 26$. What is the value of *x*?



diagonals ≅
⇒ $4x = 26$
$x = \boxed{6.5}$

A 6.5
B 13

11. *JKLM* is a rhombus. If m∠*JML* = 70°, what is the value of m∠*JKM*?



A 35°

B 55°

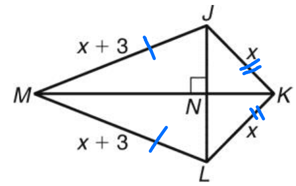
C 70°

D 110°

12. removed

13. removed

14. Which best describes the figure?



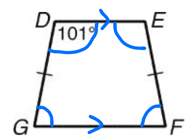
A kite

B parallelogram

C quadrilateral

D trapezoid

15. What is m∠*F* in the isosceles trapezoid?

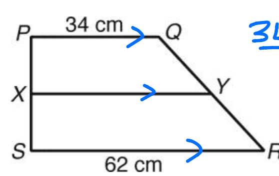


$180° - 101°$
$\boxed{= 79°}$

A 79°

B 101°

16. In trapezoid *PQRS*, what is the length of midsegment $\overline{XY}$?



$\frac{34+62}{2} = \frac{96}{2}$

A 48 cm

B 51 cm