Circle the best answer.
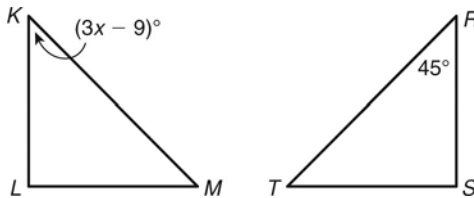
1. Which item can be given as a statement in a proof?

    A Given

    B Def. of comp. $\angle$s

    C $m\angle 1 + m\angle 2 = 180°$

2. Given the partially completed two-column proof, which is the reason for Step 3?

Statements	Reasons
1. $\overline{AE} \cong \overline{FB}$	1. Given
2. $\overline{FB} \cong \overline{EF}$	2. Given
3. $\overline{AE} \cong \overline{EF}$	3. ___?___

    F Def. of midpoint

    G Trans. Prop. of $\cong$

3. If $\triangle KLM \cong \triangle RST$, find the value of x.
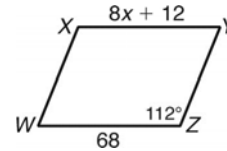

    A 18

    B 45

4. Given: $\angle A \cong \angle D$, $\angle B \cong \angle E$, $\angle C \cong \angle F$, $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, and $\overline{CA} \cong \overline{FD}$. Which is a correct congruence statement?

    F $\triangle BCA \cong \triangle DEF$

    G $\triangle ABC \cong \triangle DEF$
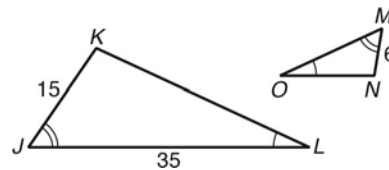
Use the figure for Exercises 5 and 6.

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

    A 68°

    B 112°

6. $WXYZ$ is a parallelogram. What is the value of x?
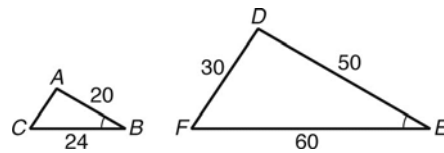
    F 7

    G 10

7. Which similarity postulate or theorem lets you conclude that $\triangle JKL \sim \triangle MNO$?

    A AA

    B SSS
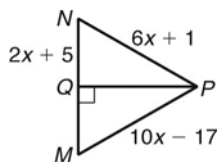
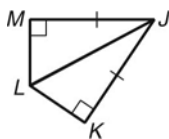8. What is the length of $\overline{AC}$?

    F 10

    G 12

    H 15

Choose the best answer.

1. $\overline{PQ}$ is the perpendicular bisector of $\overline{MN}$. What is QN?

   N
   6x + 1
   2x + 5
   Q ⊥ P
   10x − 17
   M

   A 7   C 14
   B 10.5

2. If $m\angle LJK = 28°$, what is $m\angle MLK$?
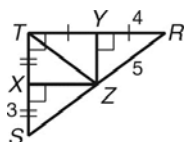
   M ⊥   J
   L
   K

   F 56°   H 124°
   G 62°

3. A segment has endpoints $S(-4, -3)$ and $T(2, -9)$. Which equation represents the perpendicular bisector of the segment?
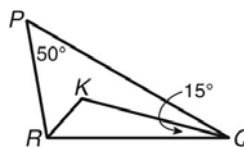
   A $y + 6 = 1(x + 1)$
   B $y + 9 = 1(x - 2)$
   C $y + 3 = 1(x + 4)$

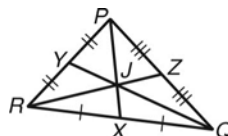4. Point Z is the circumcenter of $\triangle RST$. What is TZ?

   T   Y   4   R
   X   5
   3   Z
   S

   F 3   H 5
   G 4

5. Point K is the incenter of $\triangle PQR$. What is $m\angle RKQ$?

   P
   50°
   K   15°
   R   Q

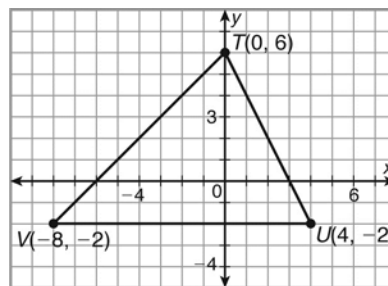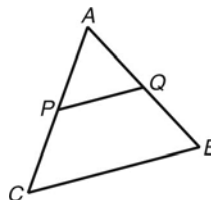   A 100   C 125
   B 115

6. Which must be true?

   P
   Y   J   Z
   R
   X   Q

   F $m\angle PQY = m\angle RQY$
   G $m\angle PRZ = m\angle RPX$
   H $QJ = 2 \bullet JY$

7. Where do the altitudes of $\triangle TUV$ meet?

   T(0, 6)
   3
   −4   0   6   x
   V(−8, −2)   U(4, −2)
   −4

   A $(0, 2)$ C $(0, 1)$
   B $(0, 1.5)$

8. $\overline{PQ}$ is a midsegment of $\triangle ABC$. Which statement is impossible?

   A
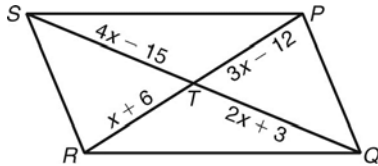   P   Q
   B
   C

   F $AP = PC$ H $\overline{PQ} \parallel \overline{BC}$
   G $PQ = BC$

Choose the best answer.

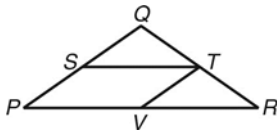1. The consecutive angles of a parallelogram measure $(x + 30)°$ and $4x°$. What is the measure of the smallest angle?

   A 10°

   B 30°

   C 60°

2. *PQRS* is a parallelogram. Find *x*.

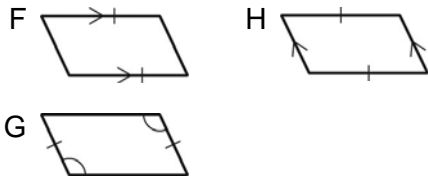   F 3

   G 7

   H 9

3. *PSTV* is a parallelogram, and *V* is the midpoint of $\overline{PR}$.

   Which is NOT necessarily true?

   A $TR = TV$

   B $QS = SP$

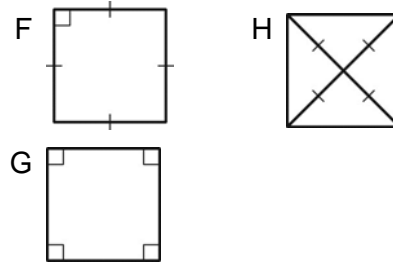   C $\overline{QP} \parallel \overline{TV}$

4. Which quadrilateral MUST be a parallelogram?

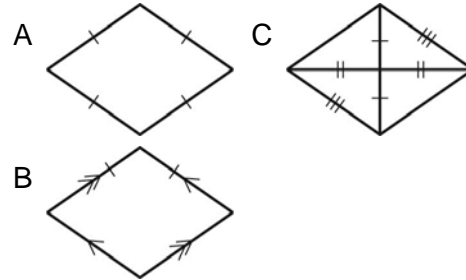

5. In quadrilateral *WXYZ*, $\angle W \cong \angle Y$. Which information would help to prove that *WXYZ* is a parallelogram?

   A $WY = XZ$

   B $\angle X \cong \angle W$

   C $\angle X \cong \angle Z$

6. Which MUST be a square?

7. Which is NOT necessarily a rhombus?

8. Quadrilateral *RSTU* is a parallelogram. What other information would allow you to prove that *RSTU* is a rectangle?

   F Opposite angles are congruent.

   G Opposite sides are congruent.

   H The diagonals are congruent.

9. Three sides of a kite measure 8 inches, 10 inches, and 8 inches. What is the perimeter of the kite?

   A 26 in.

   B 28 in.

   C 36 in.