

Student Name:

Grade:

Date:

Subject: Mathematics

Subject Teacher: Abdulkader Amro

Topic: Trapezoids & Kites

M2L6 Trapezoids and Kites— MULTIPLE-CHOICE ASSESSMENT

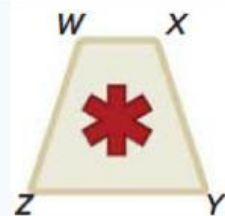
Choose the one mathematically correct answer for each question.

Part I — Trapezoids & Midsegments

Use the diagrams and properties shown in the source questions.

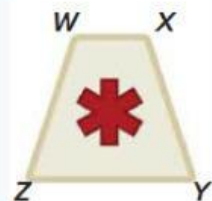
- The front face of the medical sign is an isosceles trapezoid. Given
- $WX = 2x - 2$ and $XY = 5x - 3$, what is x ? [Source 1(a)]

- A. 6
- B. 7
- C. 8
- D. 9



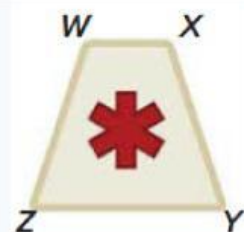
- If $m\angle W = 106^\circ$ in the isosceles trapezoid, what is $m\angle Z$? [Source 1(b)]

- A. 64°
- B. 74°
- C. 84°
- D. 106°



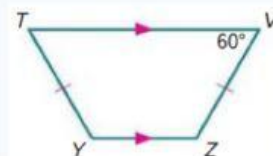
- Using $x = 8$, $WX = 2x - 2$, $WZ = 4x + 5$, $YZ = 2x + 6$, and $XY = 5x - 3$, find the perimeter of the front face. [Source 1(c)]

- A. 96 in.
- B. 102 in.
- C. 110 in.
- D. 118 in.



- In the isosceles trapezoid TVZY, $m\angle V = 60^\circ$. What is $m\angle T$? [Source 2]

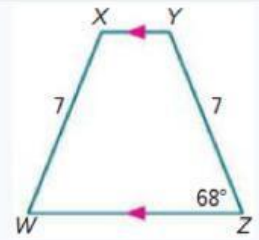
- A. 60°
- B. 90°
- C. 120°
- D. 130°



5. In isosceles trapezoid WXYZ, the legs are 7 units and $m\angle Z = 68^\circ$.

What is $m\angle Y$? [Source 3]

- A. 68°
- B. 102°
- C. 112°
- D. 122°



6. For RSTU with $R(-3, -3)$, $S(5, 1)$, $T(10, -2)$, and $U(-4, -9)$, which statement correctly verifies that RSTU is a trapezoid? [Source 4(a)]

- A. $RS \parallel TU$ because both slopes are $1/2$.
- B. $ST \parallel RU$ because both slopes are $1/2$.
- C. $RS \perp TU$ because their slopes are opposites.
- D. All four sides have equal length.

7. Using the same coordinates, is RSTU an isosceles trapezoid? [Source 4(b)]

- A. Yes; $ST = RU$.
- B. Yes; all four sides are equal.
- C. No; $ST = \sqrt{34}$ and $RU = \sqrt{37}$.
- D. No; RS and TU are not parallel.

8. For $A(-1, 5)$, $B(3, 2)$, $C(-8, 2)$, and $D(-4, 5)$, which statement verifies that ABCD is a trapezoid? [Source 5(a)]

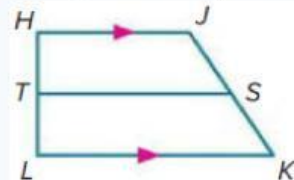
- A. $AB \parallel CD$; both slopes are $-3/4$.
- B. $AD \parallel BC$; both slopes are $3/4$.
- C. $AB \perp CD$.
- D. All four sides are equal.

9. Using the same coordinates, is ABCD an isosceles trapezoid? [Source 5(b)]

- A. Yes; $AD = BC = 8$.
- B. Yes; $AB = CD$.
- C. No; $AD = 5$ and $BC = 11$.
- D. No; AB and CD are not parallel.

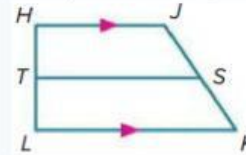
10. TS is the midsegment of trapezoid HJKL. If $HJ = 14$ and $LK = 42$, find TS. [Source 6]

- A. 21
- B. 24
- C. 28
- D. 56



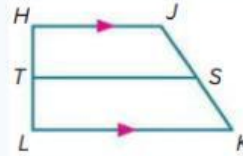
11. TS is the midsegment of trapezoid HJKL. If $LK = 19$ and $TS = 15$, find HJ. [Source 7]

- A. 9
- B. 11
- C. 13
- D. 15



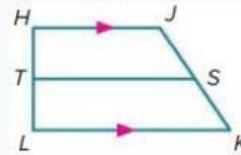
12. TS is the midsegment of trapezoid HJKL. If $HJ = 7$ and $TS = 10$, find LK. [Source 8]

- A. 11
- B. 12
- C. 13
- D. 14



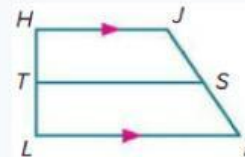
13. TS is the midsegment of trapezoid HJKL. If $LK = 17$ and $HJ = 9$, find ST. [Source 9]

- A. 11
- B. 12
- C. 13
- D. 14



14. TS is the midsegment of trapezoid HJKL. If $TS = 24$ and $LK = 27.4$, find HJ. [Source 10]

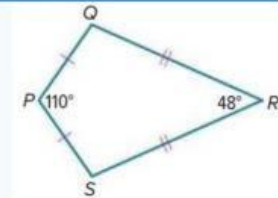
- A. 18.6
- B. 20.6
- C. 21.4
- D. 23.6



Part II — Kites

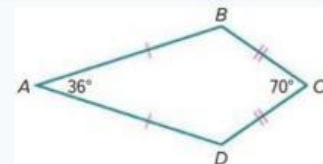
15. In kite PQRS, $m\angle P = 110^\circ$ and $m\angle R = 48^\circ$. Find $m\angle Q$. [Source 13]

- A. 91°
- B. 96°
- C. 101°
- D. 106°



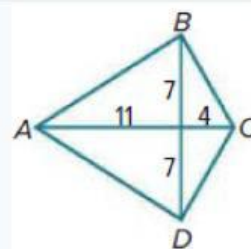
16. In kite ABCD, $m\angle A = 36^\circ$ and $m\angle C = 70^\circ$. Find $m\angle D$. [Source 14]

- A. 117°
- B. 124°
- C. 127°
- D. 134°



17. In kite ABCD, the diagonals are perpendicular. If $AP = 11$ and $PC = 4$, and $BP = 7$, find BC in simplest radical form. [Source 15(a)]

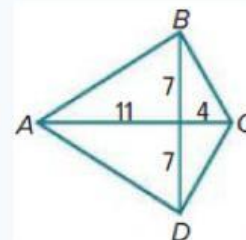
- A. $\sqrt{57}$
- B. $\sqrt{65}$
- C. $\sqrt{72}$
- D. $\sqrt{89}$



18. Using the same kite, find the perimeter to the nearest tenth.

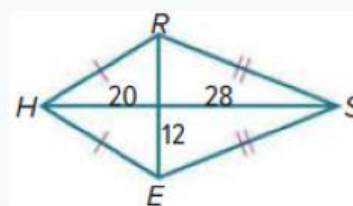
($AB = \sqrt{170}$ and $BC = \sqrt{65}$.) [Source 15(b)]

- A. 38.6
- B. 40.7
- C. 42.2
- D. 44.1



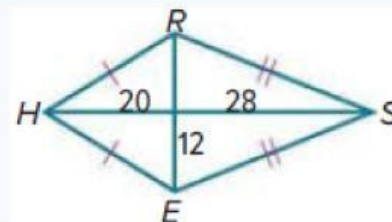
19. In kite HRSE, the diagonals intersect at right angles. If the half-segment from H to the intersection is 20 and the half-segment from R to E is 6, find RH in simplest radical form. [Source 16(a)]

- A. $2\sqrt{101}$
- B. $2\sqrt{109}$
- C. $\sqrt{436}$
- D. $2\sqrt{119}$



20. Using the same kite, with HS split into 20 and 28 and $RE = 12$, find the perimeter of $HRSE$ to the nearest tenth. [Source 16(b)]

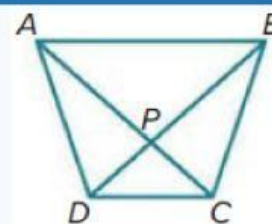
- A. 95.0
- B. 97.5
- C. 99.0
- D. 101.5



Part III — Mixed Exercises

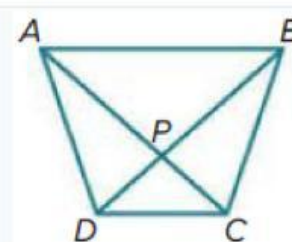
21. ABCD is a trapezoid. If $AC = 3x - 7$ and $BD = 2x + 8$, find x so that ABCD is isosceles. [Source 17]

- A. 11
- B. 13
- C. 15
- D. 17



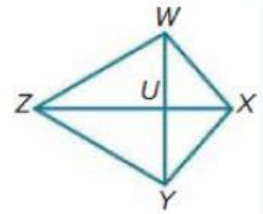
22. ABCD is a trapezoid. If $m\angle ABC = (4x + 11)^\circ$ and $m\angle DAB = (2x + 33)^\circ$, find x so that ABCD is isosceles. [Source 18]

- A. 9
- B. 10
- C. 11
- D. 12



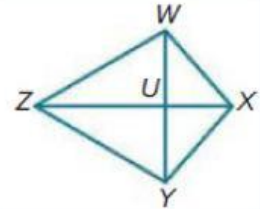
23. WXYZ is a kite. The source states $m\angle WXY = 120^\circ$, $m\angle WZY = 4x^\circ$, and $m\angle ZWX = 10x^\circ$. What is the mathematically correct conclusion from the stated data? [Source 19]

- A. $x = 30$ and all angles are valid.
- B. $m\angle ZYX = 120^\circ$.
- C. The stated measurements are internally inconsistent with a kite.
- D. $x = 12$ and $m\angle ZYX = 60^\circ$.



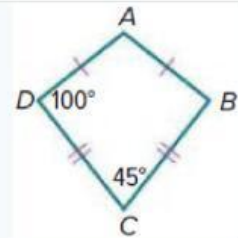
24. WXYZ is a kite. The source states $m\angle WXY = (13x + 24)^\circ$, $m\angle WZY = 35^\circ$, and $m\angle ZYX = (13x + 14)^\circ$. What is the mathematically correct conclusion from the stated data? [Source 20]

- A. $x = 1$ and $m\angle ZWX = 90^\circ$.
- B. $x = 11/13$ and the remaining angle is valid.
- C. The stated measurements are internally inconsistent with a kite.
- D. $x = 13$ and $m\angle ZWX = 35^\circ$.



25. In kite ABCD, $m\angle D = 100^\circ$ and $m\angle C = 45^\circ$. Bedagi says $m\angle A = 45^\circ$, while Belinda says $m\angle A = 115^\circ$. Who is correct? [Source 29]

- A. Bedagi; opposite angles are equal.
- B. Belinda; $m\angle B = 100^\circ$, so $m\angle A = 115^\circ$.
- C. Both are correct.
- D. Neither; $m\angle A = 90^\circ$.



26. JKLM is a kite. $JM = 4y^2 - 4y + 2$, $JK = 3y^2 - 5y + 8$, $ML = 3x^2 - 6x - 10$, and $KL = 2x^2 - 2x - 5$. If $KL > JK$, find the perimeter of JKLM. [Source 30]

- A. 90
- B. 100
- C. 110
- D. 120

