

Honors Math 3

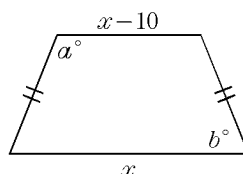
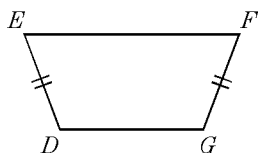
Trapezoids

1. An isosceles trapezoid has legs that measure 24 units each. If the perimeter of the trapezoid is 150 units, what is the length of its median?

2. The perimeter of trapezoid $WXYZ$ is 200 cm. The lengths of legs \overline{WX} and \overline{YZ} are 44 cm and 48 cm, respectively. What is the length of the median of this trapezoid?

3. Trapezoid $DEFG$ has bases \overline{DG} and \overline{EF} where $DG = 12$ and $EF = 18$. The perimeter of the trapezoid is 48. What is the length of \overline{FG} ?

4. The isosceles trapezoid shown has a perimeter of 110 inches, $a = 109$, and the length of each leg of this trapezoid is 15 inches. Find the value of b and find the length of the shorter base.

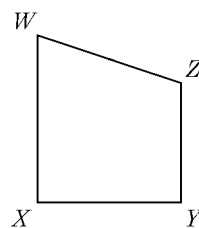


5. Isosceles trapezoid $ABCD$ has a perimeter of 52 with a median of length 15. The legs of the trapezoid measure $3x + 5$ and $6x - 1$. Find the value of x .

6. A trapezoid has bases of length $4x$ and x . The length of its median is 10. What are the lengths of the bases of this trapezoid?

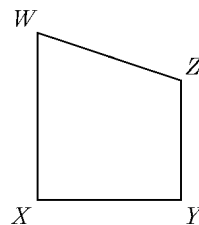
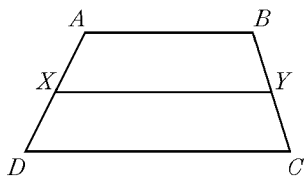
7. One of the bases of a trapezoid is three times as long as the other base. If the sum of the bases is 72 cm, what is the length of the median of the trapezoid?

8. In the diagram, quadrilateral $WXYZ$ is a trapezoid with base \overline{WX} . If $m\angle W = x + 50$ and $m\angle Z = 150 - 4x$, what is the value of x ?



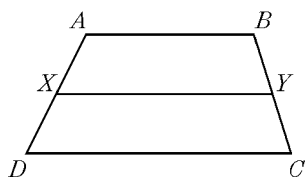
9. The bases of trapezoid $ABCD$ measure $AB = 15 - x$ and $DC = 15 + x$. Also, $XD = 7$, $XA = 7$, $CY = 6$, and $YB = 6$. What is the length of median \overline{XY} ?

10. In the diagram, quadrilateral $WXYZ$ is a trapezoid with base \overline{WX} . If $m\angle W = x + 15$ and $m\angle Z = 2x - 5$, what is the value of x ?

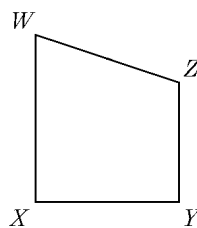


Trapezoids

11. In the diagram, trapezoid $ABCD$ has median \overline{XY} drawn. If $AB = x + 1$, $CD = 5x - 2$, and $XY = 2x + 6$, what is the value of x ?



12. In the diagram, quadrilateral $WXYZ$ is a trapezoid with base \overline{WX} , $m\angle W = x^2 + 3x$, and $m\angle Z = -14x$. Find the value of x .



Determine whether each of the following statements is always, sometimes, or never true.

- | | |
|--|---|
| 13. A trapezoid is a quadrilateral. | 14. A quadrilateral is a trapezoid. |
| 15. A trapezoid has a right angle. | 16. A trapezoid is a parallelogram. |
| 17. The consecutive angles of a trapezoid are supplementary. | 18. A trapezoid has three congruent sides. |
| 19. One leg of a trapezoid is congruent to both bases. | 20. A trapezoid contains two pairs of parallel sides. |
| 21. The median of a trapezoid is parallel to both bases. | 22. The midpoints of the legs of a trapezoid are the endpoints of the median. |
| 23. A leg of a trapezoid is longer than either base. | 24. A trapezoid with two congruent sides is isosceles. |
| 25. A trapezoid with three congruent sides is isosceles. | |

1.
Answer: 51 units
CodePath: EAS.GEO.D.D.1
2.
Answer: 54 cm
CodePath: EAS.GEO.D.D.7
3.
Answer: 9 units
CodePath: EAS.GEO.D.D.3
4.
Answer: 71; 35 in.
CodePath: EAS.GEO.D.D.5
5.
Answer: 2
CodePath: EAS.GEO.D.D.9
6.
Answer: 4 and 16
CodePath: EAS.GEO.D.D.15
7.
Answer: 36 cm
CodePath: EAS.GEO.D.D.19
8.
Answer: $\frac{20}{3}$
CodePath: EAS.GEO.D.D.26
9.
Answer: 15
CodePath: EAS.GEO.D.D.21
10.
Answer: $\frac{170}{3}$
CodePath: EAS.GEO.D.D.25
11.
Answer: $\frac{13}{2}$
CodePath: EAS.GEO.D.D.23
12.
Answer: -9
CodePath: EAS.GEO.D.D.27
13.
Answer: Always
CodePath: EAS.GEO.D.C.11
14.
Answer: Sometimes
CodePath: EAS.GEO.D.C.12

15.
Answer: Sometimes
CodePath: EAS.GEO.D.C.13
16.
Answer: Never
CodePath: EAS.GEO.D.C.14
17.
Answer: Sometimes
CodePath: EAS.GEO.D.C.16
18.
Answer: Sometimes
CodePath: EAS.GEO.D.C.17
19.
Answer: Never
CodePath: EAS.GEO.D.C.18
20.
Answer: Never
CodePath: EAS.GEO.D.C.19
21.
Answer: Always
CodePath: EAS.GEO.D.C.20
22.
Answer: Always
CodePath: EAS.GEO.D.C.21
23.
Answer: Sometimes
CodePath: EAS.GEO.D.C.22
24.
Answer: Sometimes
CodePath: EAS.GEO.D.C.23
25.
Answer: Never
CodePath: EAS.GEO.D.C.24