

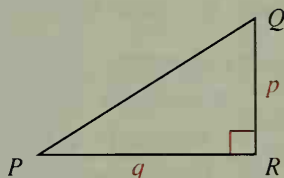
19. The grade of a road is 7%. What angle does the road make with the horizontal?
20. A road climbs at an 8° angle with the horizontal. What is the grade of the road?
21. The base of an isosceles triangle is 70 cm long. The altitude to the base is 75 cm long. Find, to the nearest degree, the base angles of the triangle.
22. A rhombus has diagonals of length 4 and 10. Find the angles of the rhombus to the nearest degree.
23. The shorter diagonal of a rhombus with a 70° angle is 122 cm long. How long, to the nearest centimeter, is the longer diagonal?
24. A rectangle is 80 cm long and 20 cm wide. Find, to the nearest degree, the acute angle formed at the intersection of the diagonals.
25. A natural question to consider is the following:

Does $\tan A + \tan B = \tan (A + B)$?

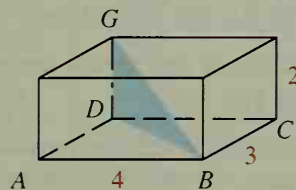
Try substituting 35° for A and 25° for B .

- a. $\tan 35^\circ + \tan 25^\circ \approx \frac{?}{?} + \frac{?}{?} = \frac{?}{?}$
- b. $\tan (35^\circ + 25^\circ) = \tan \frac{?}{?}^\circ \approx \frac{?}{?}$
- c. What is your answer to the general question raised in this exercise, yes or no?
- d. Do you think $\tan A - \tan B = \tan (A - B)$? Explain.

26. a. Given: $\triangle PQR$; $\angle R$ is a right angle.
Prove: $\tan P \cdot \tan Q = 1$
- b. If $\tan 32^\circ \approx \frac{5}{8}$, find $\tan 58^\circ$
without using a table or a calculator.



27. A rectangular box has length 4, width 3, and height 2.
 - a. Find BD .
 - b. Find $\angle GBD$ to the nearest degree.



- C** 28. If the figure is a cube, find $\angle TQS$ to the nearest degree.

