

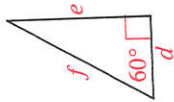
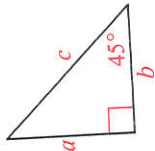
Written Exercises

- A** 1. Draw an equilateral triangle with sides 10 units long. Draw an altitude. On your diagram, show the length of each segment of the base.
 a. Use Theorem 6-7 to find the length of the altitude.
 b. Use the Pythagorean Theorem to find the length of the altitude.
2. Draw a square with a diagonal 13 units long.
 a. Use Theorem 6-6 to find the length of a side of the square.
 b. Use the Pythagorean Theorem to find the length of a side of the square.

Copy and complete the tables.

	3.	4.	5.	6.	7.	8.
a	6	?	$\sqrt{5}$?	?	?
b	?	$\frac{4}{3}$?	?	?	?
c	?	?	?	$8\sqrt{2}$	6	$\sqrt{22}$

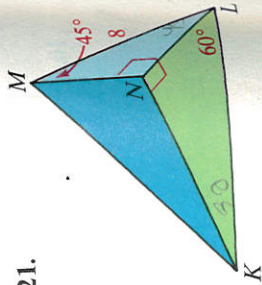
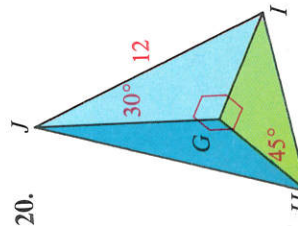
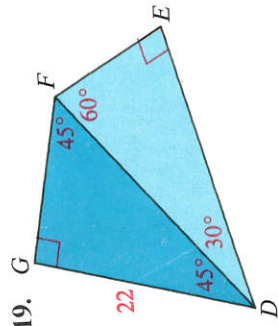
	9.	10.	11.	12.	13.	14.
d	7	$\frac{1}{5}$?	?	?	?
e	?	?	$5\sqrt{3}$	6	?	?
f	?	?	?	?	12	5



Copy and complete the table. Draw a new sketch for each exercise and label lengths as you find them.

	TU	UV	TV	WT	WU	WV
15.	7	?	?	?	?	?
16.	?	?	$8\sqrt{3}$?	?	?
17.	25	?	?	50	?	?
18.	?	?	?	?	7	?

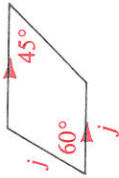
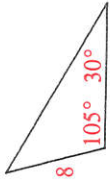
Find the lengths of as many segments as possible.



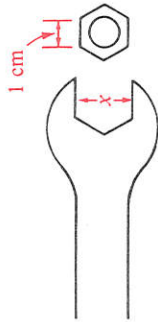
22. The diagonals of a rectangle are 8 units long and intersect at a 60° angle. Find the dimensions of the rectangle.
 23. The sum of the lengths of the sides of a rhombus is 64 and one of its angles has measure 120. Find the lengths of the diagonals.
 24. Prove Theorem 6-6.
 25. Explain why any triangle having sides in the ratio $1:\sqrt{3}:2$ must be a $30^\circ-60^\circ-90^\circ$ triangle.

- C** 26. In quadrilateral $QRST$: $m\angle R = 60$; $m\angle T = 90$; $QR = RS$; $ST = 8$; $TQ = 8$. How long is the longer diagonal of the quadrilateral?

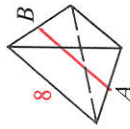
27. Find the perimeter of the triangle. 28. Find the length of the median of the trapezoid in terms of j .



29. If the wrench just fits the hexagonal nut, what is the value of x ?



- ★** 30. The six edges of the solid shown are 8 units long. A and B are midpoints of two edges as shown. Find AB .



Self-Test 2

Three sides of a triangle are given. Tell whether the triangle is acute, right, or obtuse.

1. 11, 60, 61 2. 7, 9, 11 3. 0.2, 0.3, 0.4
4. If $a = 5$, then $b = ?$ and $c = ?$.
 5. If $c = 12$, then $a = ?$ and $b = ?$.
 6. If $j = 4$, then $k = ?$ and $l = ?$.
 7. If $l = 10$, then $j = ?$ and $k = ?$.
 8. If $k = 6$, then $j = ?$ and $l = ?$.
 9. The sides of a rhombus are 4 units long, and one diagonal has length 4. How long is the other diagonal?

