64. **WATER RATE** A *weir* is a dam that is built across a river to regulate the flow of water. The flow rate Q (in cubic feet per second) can be calculated using the formula $Q = 3.367\ell h^{3/2}$ where ℓ is the length (in feet) of the bottom of the spillway and h is the depth (in feet) of the water on the spillway. Determine the flow rate of a weir with a spillway that is 20 feet long and has a water depth of 5 feet.
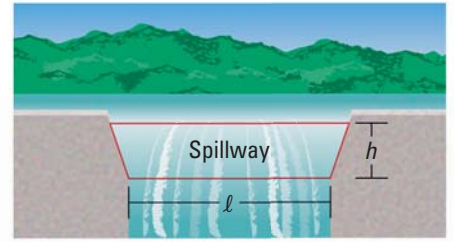
65. ★ **EXTENDED RESPONSE** Some games use dice in the shape of regular polyhedra. You are designing dice and want them all to have the same volume as a cube with an edge length of 16 millimeters.

Name	Tetrahedron	Octahedron	Dodecahedron	Icosahedron
Number of faces	4	8	12	20
Volume formula	$V = 0.118x^3$	$V = 0.471x^3$	$V = 7.663x^3$	$V = 2.182x^3$

a. Find the volume of a cube with an edge length of 16 millimeters.

b. Find the edge length x for each of the polyhedra shown in the table.

c. Does the polyhedron with the greatest number of faces have the smallest edge length? *Explain*.

66. **CHALLENGE** The mass of the particles that a river can transport is proportional to the sixth power of the speed of the river. A certain river normally flows at a speed of 1 meter per second. What must its speed be in order to transport particles that are twice as massive as usual? 10 times as massive? 100 times as massive?
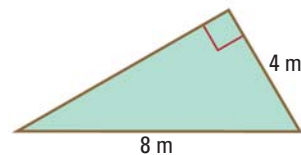
MIXED REVIEW FOR TAKS

67. ★ **TAKS PRACTICE** Which expression is equivalent to $2x(4x + 1) - (7x + 3)(x - 4)$? *TAKS Obj. 2*

(A) $x^2 - 23x - 12$

(B) $15x^2 - 23x - 12$

(C) $-x^2 + 27x + 12$

(D) $x^2 + 27x + 12$

68. ★ **TAKS PRACTICE** Frank digs a trench around the triangular garden shown. What is the approximate length of the trench that he digs? *TAKS Obj. 6*

(F) 18.9 m

(G) 19.3 m

(H) 25.9 m

(J) 37.9 m

4 m

8 m