

Finding the Volume of Pyramids and Cones

The volume of a pyramid is exactly $\frac{1}{3}$ of the volume of a prism with the same base and height. The volume of a cone is exactly $\frac{1}{3}$ of the volume of a cylinder with the same base and height. The formula for finding the volume of a pyramid or cone is $V = \frac{1}{3}Bh$, in which B is the area of the base.

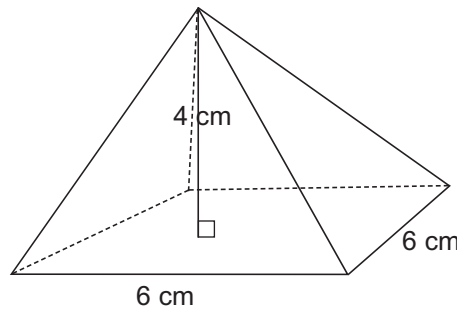
$$V = \frac{1}{3}Bh$$

$$V = \frac{1}{3}(s^2)h$$

$$V = \frac{1}{3}(6 \times 6)4$$

$$V = \frac{1}{3} \times 144$$

$$V = 48 \text{ cm}^3$$



The base is a circle with a radius of 2 cm.

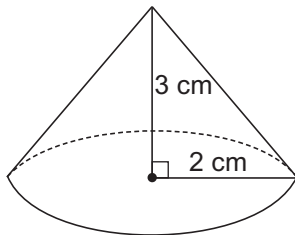
$$V = \frac{1}{3}Bh$$

$$V = \frac{1}{3}(\pi r^2)h$$

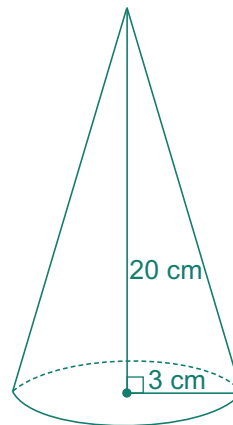
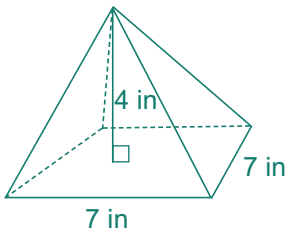
$$V = \frac{1}{3}(3.14 \times 2 \times 2)3$$

$$V = \frac{1}{3} \times 12.56 \times 3$$

$$V = 12.56 \text{ cm}^3$$



Find the volume of each. Round the repeating decimal to the nearest tenth.



1. a. _____

b. _____

Lesson 3



2. Khufu's pyramid in Egypt is 148 m high. The length of each side of its square base is 248 m. To the nearest whole cubic meter, find the volume of Khufu's pyramid. _____



3. A pile of sand has the shape of a cone. The circumference of the base is 62.8 m. The height of the pile is 15 m.
- a. Find the diameter and the radius of the base of the pile.
Diameter: _____ Radius: _____
- b. Find the volume of the pile. _____



We Remember

Simplify.

4. a. $3\{2[5 + 2(16 \div 4)]\}$

b. $[3(18 \div \sqrt{36} + 2)] \div 5$

Write a as dollars and b as cents.

5. a. 202.4 cents = _____

b. \$0.209 = _____

Multiply these numbers in scientific notation.

6. $(2.3 \times 10^{-5})(2 \times 10^{-2}) =$ _____

7. $(4 \times 10^4)(2.1 \times 10^{-3}) =$ _____

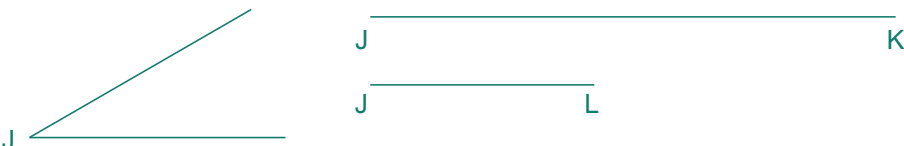
Mastery Drill

8. Any number except 0 with an exponent of 0 equals _____.
9. The two shorter sides of a right triangle are called _____.
10. Like terms must have the same _____ with the same _____.
11. a. 1 acre = _____ feet² b. 1 mile² = _____ acres
12. a. 1 quart = _____ fluid ounces b. 1 pint = _____ fluid ounces
13. a. $\frac{7}{8} =$ _____% b. $\sqrt{169} =$ _____ c. $\sqrt{225} =$ _____ d. $2^6 =$ _____

Find the markup and selling price. Round to the nearest cent.

14. The cost was \$47 marked up 40%.
- a. The markup is _____.
- b. The selling price is _____.
15. The cost was \$0.55 marked up 75%.
- a. The markup is _____.
- b. The selling price is _____.

Use a compass and a straightedge to construct a triangle from the parts given.

16. 

Translate the phrases into equations. Use n for the variable.

17. The quotient of twenty-four and a number is six. _____
18. A number subtracted from six is two. _____
19. Seven more than a number is ten. _____
20. The sum of six and the product of five and a number is eight. _____

Lesson 3

+ × Skill Builders

Write the repeating decimal with a bar.

$$\frac{3}{10}$$

$$\frac{1}{2}$$

21. a. $5\frac{1}{3} \times 3\frac{3}{4} \times \frac{1}{2} =$ _____

b. $3.3 \overline{)6.5}$

c. $\underline{+ 7\frac{1}{4}}$



Convert. Round to the nearest whole.

22. 89 cm \approx _____ in

23. 19 gal \approx _____ L

24. 80 m \approx _____ yd



25. Colleen ordered a costume-length zipper for a customer who was replacing the zipper on a sleeping bag. The 84-inch zipper cost \$1.35 plus \$0.13 per inch. What was the cost of the zipper?

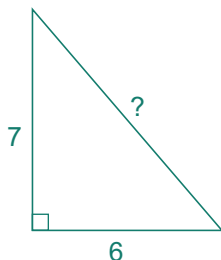
Find the commission.

26. A salesperson receives 10% commission on sales of \$2,532. _____

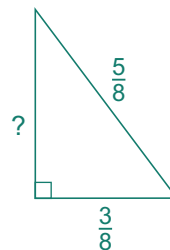


Use the Pythagorean Theorem to find the missing length. Round irrational roots to the nearest tenth.

27. a.



☆ b.



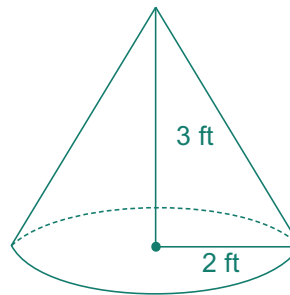
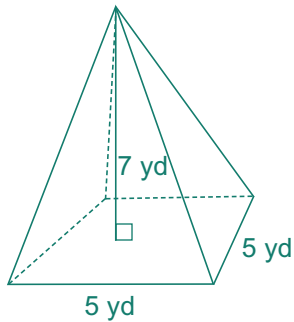
Convert.

28. a. 42 mm = _____ cm b. 2.4 L = _____ mL c. 60.5 g = _____ mg

Write the formula.

29. The formula for finding the volume of a pyramid or cone is _____.

Find the volume of each. Round the repeating decimal to the nearest tenth.

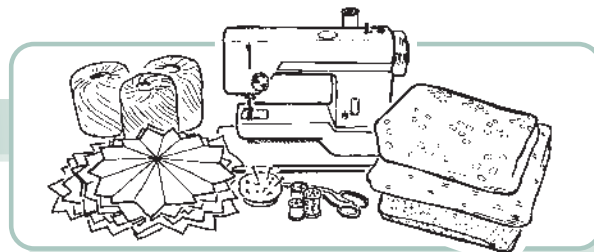


30. a. _____

b. _____

Lesson

4



Introduction to Insurances

Insurance is a way of attempting to protect oneself against loss. Sometimes insurances are required by law in order to get a license for a car, borrow money to buy a house, or work at certain jobs.

Insurances can very easily weaken our faith in God and His promises. Christians know that ever since sin entered the world in the Garden of Eden, unexpected losses are a part of life, and God desires to use them to teach us valuable lessons about faith, patience, and the futility of laying up treasures on earth. It is wise for God's children to expect some hard times, and also to be able to help others who have losses.

Lesson 4

Some Christians help each other avoid costly insurance payments by pooling some of their earnings into a fund for large medical bills that would be difficult for an individual to pay. Some banks accept church plans instead of fire insurance when someone borrows money for a house. Some states allow churches to group their resources into a plan to take the place of auto insurance. In this way, Christians show love and care for one another by sharing their material wealth with those in need.

"I will never leave thee, nor forsake thee."

Hebrews 13:5

"As we have therefore opportunity, let us do good unto all men, especially unto them who are of the household of faith."

Galatians 6:10

"I have been young, and now am old; yet have I not seen the righteous forsaken, nor his seed begging bread."

Psalm 37:25

"It is better to trust in the Lord than to put confidence in man."

Psalm 118:8

Life insurance provides for the widow and children if the "bread-winner" of the family dies. However, the Bible teaches us to trust in God and makes provision for the care of widows and orphans through brotherhood sharing in the church. Many banks recognize that some Christians do not buy life insurance, and will waive the life insurance requirement when giving a house loan.

Following are some terms commonly used in working with insurances.

Policy – The written agreement between the insured person and the insurance company. The policy states the cost of the insurance, losses covered by the insurance, and methods of payment.

Premium – The regular payment required to maintain an insurance policy.

Deductible – The amount of a loss that the policy holder is required to pay before the loss can be submitted to the insurance company.

Match the terms with their definitions.

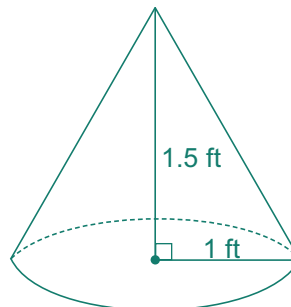
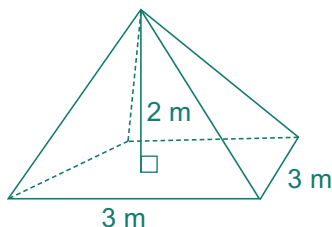
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|--------------------|--|
| 1. ____ policy | a. amount insured person pays before insurance pays for a loss |
| 2. ____ premium | b. agreement between a person and an insurance company |
| 3. ____ deductible | c. regular payment to an insurance company |

4. To satisfy the law, but offer reasonable rates for car insurance, the Wagners' church has its own coverage for the vehicles of its members. Freda can pay a yearly premium of \$120, or four quarterly payments of \$32 each. How much more does she pay per year for coverage on her car if she chooses the quarterly payment option?



We Remember

Find the volume of each solid. Round b to the nearest hundredth.



5. a. _____

b. _____



Solve the volume problem.

6. How many yards of mulch are needed for a circular flower garden with the dimensions below? Round to the nearest tenth.

radius of 25 feet, 5 inches thick _____

Solve.

7. \$4,000 borrowed at 4% interest for 60 days.
- Amount of interest owed: _____
 - Total amount to repay: _____



8. Bias tape sells at \$1.45 for 4 yards, or \$25.99 for 100 yards. How much would 100 yards cost if it was purchased at the 4-yard price? _____

Change to standard notation.

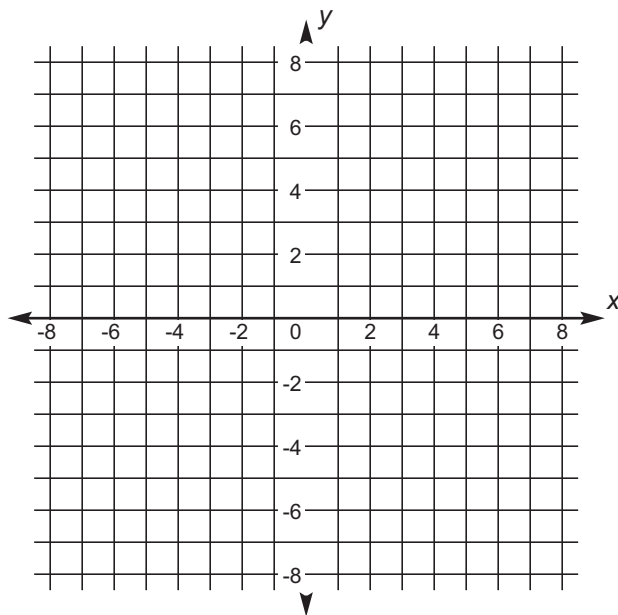
- $6.03 \times 10^8 =$ _____
- $4.3 \times 10^{-2} =$ _____

Bias tape is a strip of woven cloth cut diagonally to the direction of the weave. Cut this way, the fabric is made stretchy, and can be used to bind a curved edge such as a neckline.

Complete the tables of values, graph the equations, and complete the sentence in No. 26.

24. $x - 5 = y$

x	y
0	
3	
-3	



25. $-3x + 3 = y$

x	y
0	
1	
3	

26. The point of intersection is _____.



Find the mean, median, and mode. Round to the nearest whole.

13, 25, 15, 19, 21, 15, 27, 13, 15

27. a. mean _____

b. median _____

c. mode _____

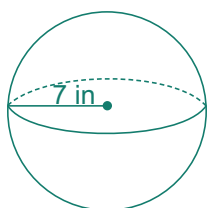
Reduce to simplest form.

28. a. $\frac{7a^3}{21a^3} =$

b. $\frac{25x^4}{5x^2} =$

Find the surface area of the sphere. Use 3.14 for pi. $SA = 4\pi r^2$

29. _____



Write policy, premium, or deductible.

30. _____ amount insured person pays before insurance pays for a loss

31. _____ agreement between a person and an insurance company

32. _____ regular payment to an insurance company