

Math 10 - Unit 1 Review - Measurement

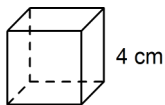
Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Convert 56 m to centimetres.
 - a. 5600 cm
 - b. 0.00056 cm
 - c. 0.56 cm
 - d. 560 cm

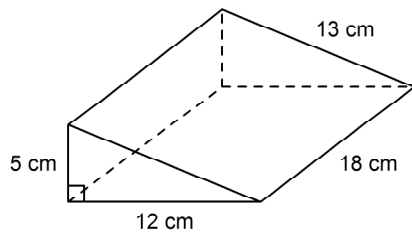
2. Convert 900 cm to millimetres.
 - a. 0.0009 mm
 - b. 90 mm
 - c. 0.9 mm
 - d. 9000 mm

3. What is the surface area of this cube?



- a. 96 cm^2
- b. 64 cm^2
- c. 24 cm^2
- d. 32 cm^2

4. Calculate the surface area of this right triangular prism.



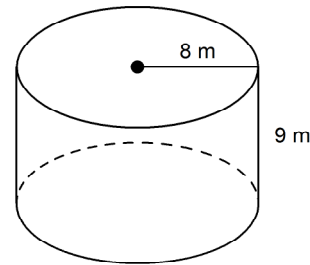
- a. 600 cm^2
- b. 540 cm^2
- c. 732 cm^2
- d. 660 cm^2

5. A right rectangular prism measures 11 cm by 5 cm by 5 cm.

What is its surface area?

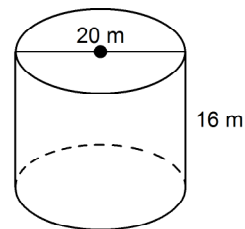
- a. 135 cm^2
- b. 270 cm^2
- c. 84 cm^2
- d. 275 cm^2

6. Find the surface area of this cylinder. Give your answer to the nearest tenth of a square metre.



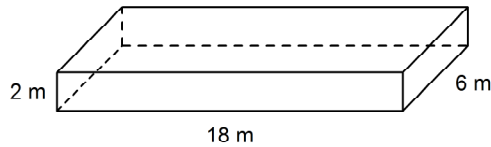
- a. 1809.6 m^2
- b. 628.3 m^2
- c. 653.5 m^2
- d. 854.5 m^2

7. Find the surface area of this cylinder. Give your answer to the nearest tenth of a square metre.



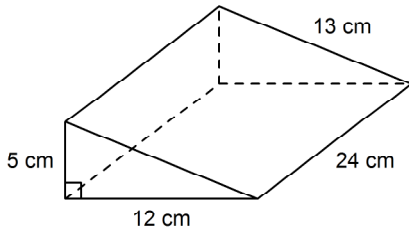
- a. 1633.6 m^2
- b. 81.7 m^2
- c. 1118.4 m^2
- d. 1319.5 m^2

8. Find the volume of this right rectangular prism.



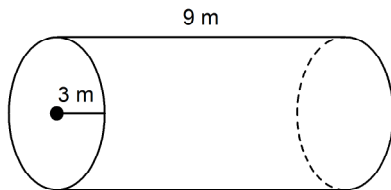
- a. 26 m^3
- b. 216 m^3
- c. 312 m^3
- d. 432 m^3

9. Calculate the volume of this right triangular prism.



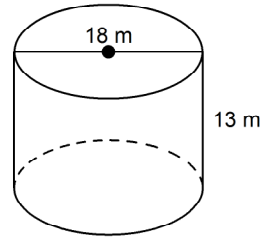
- a. 936 cm^3
- b. 1440 cm^3
- c. 780 cm^3
- d. 720 cm^3

10. Find the volume of this cylinder.
Give your answer to the nearest cubic metre.



- a. 85 m^3
- b. 198 m^3
- c. 254 m^3
- d. 47 m^3

11. Find the volume of this cylinder.
Give your answer to the nearest cubic metre.



- a. 6616 m^3
- b. 3308 m^3
- c. 1244 m^3
- d. 522 m^3

12. Convert 100 in. to yards, feet, and inches.

- a. 4 yd. 2 ft. 2 in.
- b. 2 yd. 2 ft. 4 in.
- c. 1 yd. 1 ft. 4 in.
- d. 4 yd. 0 ft. 4 in.

13. Convert 12 565 ft. to miles, yards, and feet.

- a. 6 mi. 167 yd. 1 ft.
- b. 2 mi. 55 yd. 25 ft.
- c. 2 mi. 668 yd. 1 ft.
- d. 6 mi. 668 yd. 1 ft.

14. Nancy has 7 yd. of material. She wants to make curtains that are 18 in. wide. How many curtains can Nancy make?

- a. 92
- b. 14
- c. 4
- d. 1

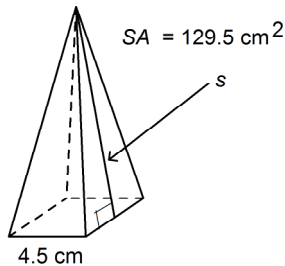
15. A map of Alberta has a scale of 1:1 505 000. The distance on the map between Calgary and Red Deer is $3\frac{1}{4}$ in. What is this distance to the nearest mile?

- a. 232 mi.
- b. 77 mi.
- c. 308 mi.
- d. 26 mi.

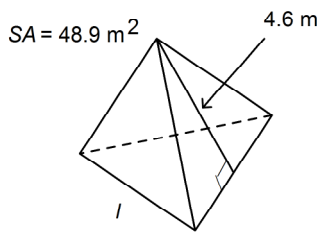
16. A map of British Columbia has a scale of 1:1 723 000. The distance on the map between Prince George and Cache Creek is $8\frac{11}{16}$ in. What is this distance to the nearest mile?
- 945 mi.
 - 79 mi.
 - 708 mi.
 - 236 mi.
17. Baseboards are sold in 8-ft. lengths. Nelia requires 73 yd. of baseboard. How many 8-ft. lengths does Nelia need to purchase?
- 29
 - 28
 - 26
 - 27
18. A gardener recommends planting daffodil bulbs 9 in. apart. Peter follows the gardener's advice and plants daffodils along the entire length of his 18-ft. driveway. How many daffodil bulbs will Peter need?
- 26
 - 24
 - 25
 - 72
19. Which referent could you use for 1 cm?
- The depth of a kitchen sink
 - The length of a public swimming pool
 - The width of your shortest finger
 - The length of a walking stick
20. Which referent could you use for 1 km?
- The distance equal to $2\frac{1}{2}$ laps on an oval running track
 - The length of an iPod
 - The length of a snowboard
 - The length of your arm span
21. Which referent could you use for 1 mm?
- The width of the head of an ant
 - The diameter of a beach ball
 - The distance between British Columbia and Manitoba
 - The length of a sheet of loose-leaf paper
22. Which referent could you use for 1 in.?
- The distance from where you are now to the nearest restaurant
 - The diameter of a bicycle wheel
 - The length of your calculator
 - The width of your largest toe
23. Which SI unit is most appropriate for measuring the length of a soccer field?
- Metres
 - Millimetres
 - Kilometres
 - Centimetres
24. Which SI unit is most appropriate for measuring the distance between your school and the nearest airport?
- Centimetres
 - Metres
 - Millimetres
 - Kilometres
25. Which SI unit is most appropriate for measuring the diameter of a marble?
- Metres
 - Kilometres
 - Millimetres
 - Centimetres
26. Which imperial unit is most appropriate for measuring the distance between the nearest lake and the nearest mountain peak?
- Feet
 - Inches
 - Miles
 - Yards
27. Which imperial unit is most appropriate for measuring the length of a ladder?
- Feet
 - Yards
 - Miles
 - Inches

28. A penalty box on a soccer field measures 44 yd. by 18 yd. What are these dimensions to the nearest tenth of a metre?
- 40.2 m by 16.5 m
 - 47.7 m by 16.5 m
 - 40.2 m by 17.6 m
 - 47.7 m by 17.6 m
29. On a road map of British Columbia, the distance between Vancouver and Fort St. John is 1237 km. What is this distance to the nearest mile?
- 769 mi.
 - 673 mi.
 - 1979 mi.
 - 2061 mi.
30. Convert 3180 m to yards and the nearest foot.
- 1060 yd. 0 ft.
 - 2935 yd. 1 ft.
 - 3477 yd. 2 ft.
 - 815 yd. 1 ft.
31. Convert 3000 yd. to the nearest tenth of a metre.
- 2700.0 m
 - 1875.0 m
 - 2743.2 m
 - 3333.3 m
32. Convert 28 mi. to the nearest kilometre.
- 38 km
 - 18 km
 - 45 km
 - 50 km
33. The Queen's Plate is a thoroughbred horse race for 3-year-old Canadian-bred horses. The race is $1\frac{1}{4}$ mi. in length. What is this distance in kilometres?
- 2 km
 - 1.7 km
 - 0.78 km
 - 1.28 km
34. The cliff at Head-Smashed-In Buffalo Jump in southwestern Alberta is about 10 m high. What is this height to the nearest foot?
- 36 ft.
 - 35 ft.
 - 33 ft.
 - 30 ft.
35. A regular tetrahedron has edge length 20.0 m and a slant height of 17.3 m. Calculate the surface area of the tetrahedron to the nearest square metre.
- 1384 m²
 - 173 m²
 - 519 m²
 - 692 m²
36. A right cone has a height of 15 in. and a base diameter of 8 in. Determine the lateral area of the cone to the nearest square inch.
- 188 square inches
 - 195 square inches
 - 245 square inches
 - 214 square inches
37. In 2008, the Queen Sesheshet Pyramid was discovered in Egypt. Archeologists determined that the original height of this right square pyramid was about 14 m and the original base side length was about 22 m. Determine its original lateral area to the nearest square metre.
- 1267 m²
 - 783 m²
 - 196 m²
 - 616 m²
38. A right rectangular pyramid has base dimensions 8 ft. by 6 ft. and a height of 12 ft. Calculate the surface area of the pyramid to the nearest square foot.
- 223 square feet
 - 159 square feet
 - 271 square feet
 - 216 square feet

39. The surface area of a right cone is 400.2 m^2 . The radius of the cone is 6.0 m . Determine the height of the cone to the nearest metre.
- 14 m
 - 16 m
 - 15 m
 - 13 m
40. Calculate the slant height, s , of this right square pyramid to the nearest tenth of a centimetre.

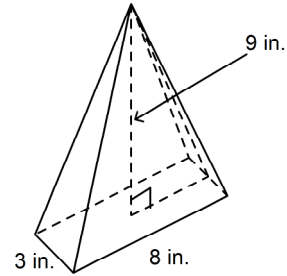


- 11.9 cm
 - 6.1 cm
 - 12.1 cm
 - 16.6 cm
41. Calculate the edge length, l , of this regular tetrahedron to the nearest tenth of a metre.



- 10.6 m
- 7.1 m
- 6.5 m
- 5.3 m

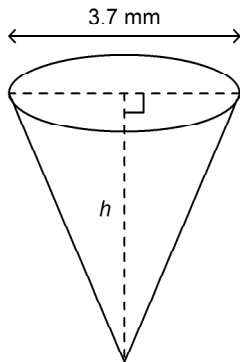
42. Calculate the volume of this right rectangular pyramid to the nearest cubic inch.



- 216 cubic inches
 - 72 cubic inches
 - 64 cubic inches
 - 78 cubic inches
43. A regular tetrahedron has base area 146.4 m^2 and height 10.7 m . Determine its volume to the nearest cubic metre.
- 586 m^3
 - 522 m^3
 - 1566 m^3
 - 3133 m^3
44. A right rectangular prism with base dimensions 7.8 m by 5.1 m has a volume of 110.1 m^3 . Determine the height of the prism to the nearest tenth of a metre.
- 2.8 m
 - 8.3 m
 - 1.2 m
 - 5.5 m
45. A right rectangular pyramid has base dimensions 9 ft. by 5 ft. , and a height of 12 ft. Determine its volume to the nearest cubic foot.
- 180 cubic feet
 - 237 cubic feet
 - 184 cubic feet
 - 192 cubic feet
46. A right cone has a height of 8 cm and a volume of 250 cm^3 . Determine the radius of the base of the cone to the nearest centimetre.
- 3 cm
 - 11 cm
 - 17 cm
 - 5 cm

47. A right cone has slant height 15 in. and base diameter 12 in. Determine its volume to the nearest cubic inch.
- 1555 cubic inches
 - 396 cubic inches
 - 518 cubic inches
 - 543 cubic inches

48. The volume of this right cone is 14.7 mm^3 . Calculate its height, h , to the nearest tenth of a millimetre.

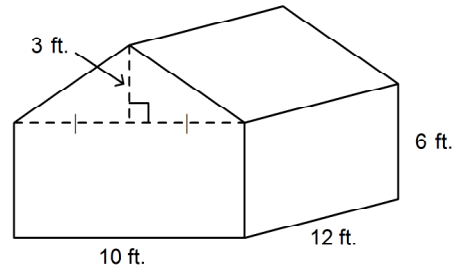


- 4.1 mm
 - 1.0 mm
 - 1.4 mm
 - 2.8 mm
49. The surface area of a tennis ball is approximately 23 square inches. What is the diameter of the tennis ball to the nearest inch?
- 3 in.
 - 1 in.
 - 4 in.
 - 6 in.

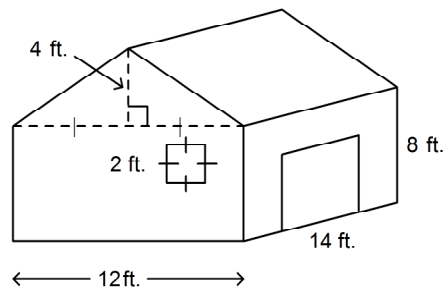
50. A ten-pin bowling ball has a radius of approximately $4\frac{1}{4}$ in. Determine the surface area of the ball to the nearest square inch.
- 57 square inches
 - 322 square inches
 - 908 square inches
 - 227 square inches

51. A ten-pin bowling ball has a radius of approximately $4\frac{1}{4}$ in. Determine the volume of the ball to the nearest cubic inch.
- 322 cubic inches
 - 5642 cubic inches
 - 227 cubic inches
 - 2572 cubic inches

52. A garden shed is a composite object formed by a right rectangular prism with a right triangular prism as its roof. Determine the surface area of the garden shed to the nearest square foot.



- 366 square feet
 - 554 square feet
 - 434 square feet
 - 464 square feet
53. A barn is a composite object formed by a right rectangular prism with a right triangular prism as its roof. The square window on the barn has side length 2 ft. Farmer Fred wants to paint the entire surface of his barn, including the door, but not the window. Determine the surface area to be painted to the nearest square foot.

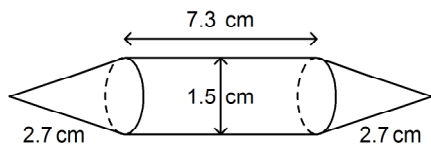


- 666 square feet
- 460 square feet
- 662 square feet
- 614 square feet

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54. Determine the volume of this composite object, which is a right cylinder and two right cones, to the nearest cubic centimetre.



- a. 37 cm^3
- b. 16 cm^3
- c. 14 cm^3
- d. 47 cm^3

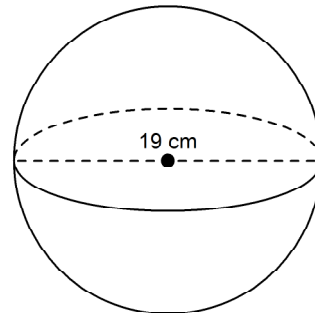
Short Answer

55. Convert 5 yd. 6 in. to inches.

56. Convert 112 in. to feet and inches.

57. A regular tetrahedron with edge length 12.7 mm has a surface area of 229.0 mm^2 . Determine the slant height of the tetrahedron to the nearest millimetre.

58. Determine the surface area of this sphere to the nearest square centimetre. Determine its volume to the nearest cubic centimetre.



59. A hemisphere has radius 7 ft. Determine the surface area of the hemisphere to the nearest square foot.

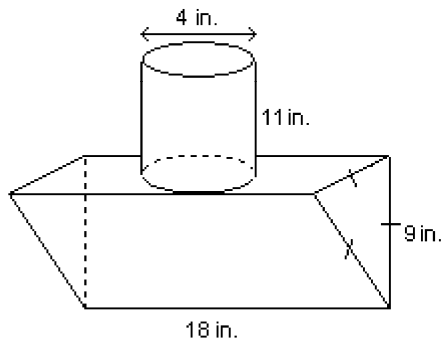
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60. A hemisphere has radius 12 m. Determine the volume of the hemisphere to the nearest tenth of a cubic metre.

61. A spherical balloon has a surface area of 88 cm^2 . What is the diameter of the balloon to the nearest tenth of a centimetre?

62. Determine the surface area of this composite object, which is a right triangular prism and a right cylinder, to the nearest square inch.

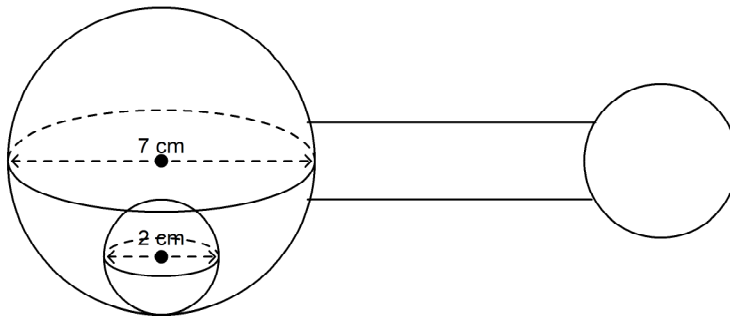


63. A slab of chocolate is a rectangular prism with dimensions 24 cm by 60 cm by 3 cm.
- What is the volume of the chocolate slab?
 - The chocolate is shared equally among 36 students.
How much chocolate does each student receive?

64. A map of B.C. has a scale of 1:2 500 000. The actual distance between Nanaimo and Campbell River is approximately 96 mi. What is this distance on the map? Answer to the nearest sixteenth of an inch.

65. Sheila plans to place crown moulding along the top of each wall in her family room. A total of 554 in. of moulding is required. The moulding costs \$1.59/ft. and is sold in 8-ft. lengths. What is the cost of the crown moulding, before taxes?
66. A right square pyramid has a height of 7.5 m and a base perimeter of 36 m. Calculate the surface area of the pyramid to the nearest square metre.

67. A baby's rattle contains a plastic ball inside a spherical case. The diameter of the plastic ball is 2 cm and the diameter of the case is 7 cm.



- Calculate the volume of the spherical case, to the nearest cubic centimetre.
- Calculate the volume of the plastic ball, to the nearest cubic centimetre.
- Calculate the volume of air in the rattle, to the nearest cubic centimetre.

**Math 10 - Unit 1 Review - Measurement
Answer Section****MULTIPLE CHOICE**

1. A
2. D
3. A
4. A
5. B
6. D
7. A
8. B
9. D
10. C
11. B
12. B
13. C
14. B
15. B
16. D
17. B
18. B
19. C
20. A
21. A
22. D
23. A
24. D
25. C
26. C
27. A
28. A
29. A
30. C
31. C
32. C
33. A
34. C
35. D
36. B
37. B
38. A
39. A

- 40. C
- 41. D
- 42. B
- 43. B
- 44. A
- 45. A
- 46. D
- 47. C
- 48. A
- 49. A
- 50. D
- 51. A
- 52. C
- 53. C
- 54. B

SHORT ANSWER

- 55. 186 in.
- 56. 9 ft. 4 in.
- 57. 9 mm
- 58. $SA = 1134 \text{ cm}^2$
 $V = 3591 \text{ cm}^3$
- 59. 462 square feet
- 60. 3619.1 m^3
- 61. 5.3 cm
- 62. 694 square inches
- 63. a) The volume of the chocolate slab is 4320 cm^3 .
- b) Each student receives 120 cm^3 of chocolate.
- 64.

The distance on the map between Nanaimo and Campbell River is approximately $2\frac{7}{16}$ in.

- 65. The number of 8-ft. lengths is greater than 5, so Sheila must buy 6 lengths.
The total number of feet in 6 lengths is: $6(8 \text{ ft.}) = 48 \text{ ft.}$

Before taxes, the crown moulding will cost \$76.32.

- 66. The surface area of the pyramid is approximately 238 m^2 .

67. a) The volume of the spherical case is approximately 180 cm^3 .
- b) The volume of the plastic ball is approximately 4 cm^3 .
- c) The volume of air in the rattle is: $179.5943... \text{ cm}^3 - 4.1887... \text{ cm}^3 = 175.4055... \text{ cm}^3$
The volume of air in the rattle is approximately 175 cm^3 .