

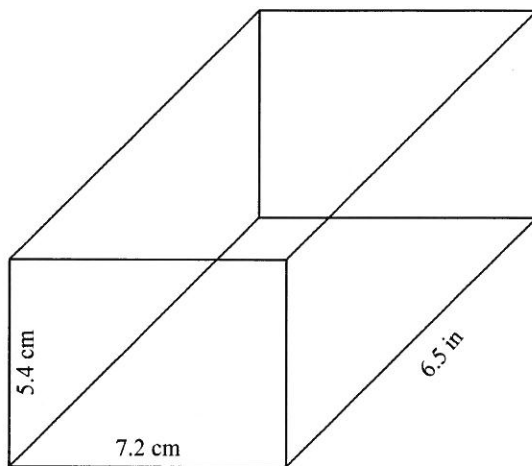
Name: _____

ID: A

___ 12. A cube has a volume of 1 cubic foot. What is its volume in cubic inches?

- a. 144 cu in
- b. 1827 cu in
- c. 1728 cu in
- d. 168 cu in

___ 13. Find the volume of the rectangular prism below, in cm^3 .



- a. 708.5 cm^3
- b. 252.7 cm^3
- c. 493.6 cm^3
- d. 641.5 cm^3

Short Answer

1. Michael has been training to run a 4-minute mile. He manages to run 1700 m in 4 minutes. Did he succeed?

2. An American tourist is wondering how far it is from Saskatoon, SK to Edmonton, AB. You know that it is approximately 525 km. How far would you tell the tourist it is, in imperial units?

Name: _____

ID: A

3. a) Convert 550 cm to inches.
.
b) Convert your answer for a) to feet and inches. Round your answer to the nearest inch.
.
4. Sandy is painting the living room in her house. The room measures 18 feet long by 11 feet wide by 8 feet high. She will only paint the walls and not the floor or ceiling. What is the total area Sandy will paint?
.
5. What is the volume of a box that measures 7' by 5' by 30"? Give your answer in cubic feet.
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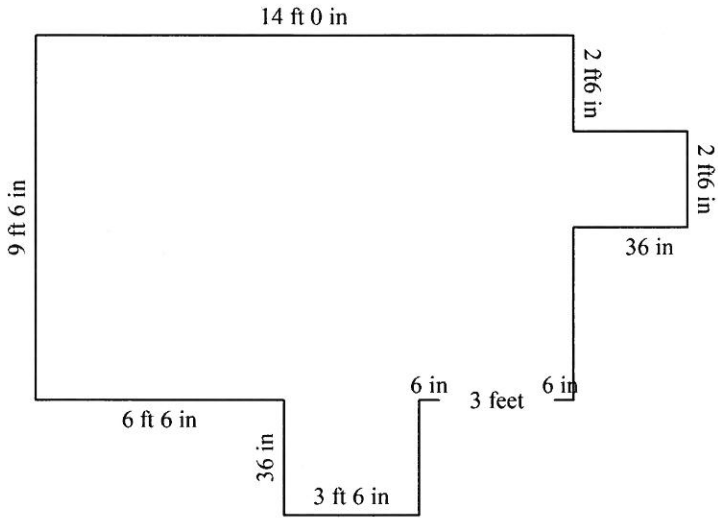
Problem

1. The gas tank of Rory's car can hold 55 litres of gas.
 - a) Rory is travelling in Colorado, USA, and needs to fill up his tank. The cost of gas is \$3.19/gallon. How much will it cost him to fill up, assuming the tank is completely empty?
.
 - b) If Rory took the same car to England, where gas costs \$8.06/gal, how much would it cost him to fill up the tank?
.

Name: _____

ID: A

2. a) Calculate the amount of baseboard that will be needed to finish the room below.
- b) If you can buy baseboard only in whole feet, how much will it cost for the room if baseboard costs \$1.64/foot?



**CH 3 Final Review
Answer Section**

MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: Easy REF: 3.1
OBJ: Measurement LOC: M-SO2 TOP: Systems of Measurement
KEY: Converting between imperial units
2. ANS: B PTS: 1 DIF: Easy REF: 3.1
OBJ: Measurement LOC: M-SO2 TOP: Systems of Measurement
KEY: Converting between imperial units
3. ANS: B PTS: 1 DIF: Moderate REF: 3.1
OBJ: Measurement LOC: M-SO2 TOP: Systems of Measurement
KEY: Converting between imperial units
4. ANS: C PTS: 1 DIF: Moderate REF: 3.1
OBJ: Measurement LOC: M-SO3 TOP: Systems of Measurement
KEY: Perimeter
5. ANS: B PTS: 1 DIF: Easy REF: 3.1
OBJ: Measurement LOC: M-SO3 TOP: Systems of Measurement
KEY: Circumference
6. ANS: A PTS: 1 DIF: Moderate REF: 3.2
OBJ: Measurement LOC: M-SO3 TOP: Converting Measurements
KEY: Perimeter | Imperial units
7. ANS: B PTS: 1 DIF: Easy REF: 3.3
OBJ: Measurement LOC: M-SO1 | M-SO2
TOP: Surface Area KEY: Surface Area
8. ANS: B PTS: 1 DIF: Easy REF: 3.3
OBJ: Measurement LOC: M-SO4 | A-SO1
TOP: Surface Area KEY: Surface Area
9. ANS: C PTS: 1 DIF: Easy REF: 3.3
OBJ: Measurement LOC: M-SO4 | A-SO1
TOP: Surface Area KEY: Surface Area
10. ANS: C PTS: 1 DIF: Moderate REF: 3.3
OBJ: Measurement LOC: M-SO4 | A-SO1
TOP: Surface Area KEY: Surface Area
11. ANS: C PTS: 1 DIF: Easy REF: 3.4
OBJ: Measurement LOC: M-SO1 | M-SO2
TOP: Volume KEY: Volume
12. ANS: C PTS: 1 DIF: Difficult REF: 3.4
OBJ: Measurement LOC: M-SO2 | M-SO3
TOP: Volume KEY: Converting between imperial units
13. ANS: D PTS: 1 DIF: Moderate REF: 3.4
OBJ: Measurement LOC: M-SO2 | M-SO3
TOP: Volume KEY: Converting from imperial to SI units

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ID: A

SHORT ANSWER

1. ANS:
Convert 1 mile to metres.
1 mile = 1,609 km or 1,609 m
Since 1 mile is about 1,609 metres, Michael succeeded.
PTS: 1 DIF: Easy REF: 3.2
LOC: M-SO2 TOP: Converting Measurements
KEY: Converting from imperial to SI units
2. ANS:
Convert 525 km to miles.
1 km = 0.6214 miles
 $525 \times 0.6214 = 326.235$
You should tell the tourist that the distance from Saskatoon, SK to Edmonton, AB is approximately 326 miles.
PTS: 1 DIF: Easy REF: 3.2
LOC: M-SO1 TOP: Converting Measurements
KEY: Converting from SI to imperial units
3. ANS:
a) $1 \text{ cm} = 0.3937 \text{ in}$
 $550 \text{ cm} \times 0.3937 \text{ in/cm} = 216.535 \text{ in}$
550 cm is equal to 216.535 in.
b) Convert 216.535 in to inches and feet.
 $1 \text{ ft} = 12 \text{ inches}$
 $216.535 \text{ in} \div 12 \text{ in/ft} = 18.04 \text{ ft}$
Convert the partial feet to inches.
 $18.04 - 18 = 0.04$
This remainder needs to be converted to inches.
 $0.04 \times 12 = 0.48 \text{ inches}$
Add the inches to the measure in feet and round to the nearest inch.
 $18 \text{ ft} + 0.48 = 18 \text{ ft } 1 \text{ in}$
550 cm is equal to 216.535 in or 18 ft 1 in.
PTS: 1 DIF: Moderate REF: 3.2
LOC: M-SO1 | M-SO2 TOP: Converting Measurements
KEY: Converting from SI to imperial units | Converting between imperial units

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ID: A

4. ANS:

Sandy will need to paint only the walls.

Calculate the surface area of the walls.

There are two of the longer walls.

$$A_1 = 2(l \times h)$$

$$A_1 = 2(18 \times 8)$$

$$A_1 = 288 \text{ ft}^2$$

There are two of the shorter walls.

$$A_2 = 2(l \times h)$$

$$A_2 = 2(11 \times 8)$$

$$A_2 = 176 \text{ ft}^2$$

Add to find the total area to be painted.

$$A_{\text{total}} = A_1 + A_2$$

$$A_{\text{total}} = 288 + 176$$

$$A_{\text{total}} = 464 \text{ ft}^2$$

Sandy will paint an area of 464 ft² of paint.

PTS: 1 DIF: Easy

LOC: M-SO4 | A-SO1

KEY: Surface Area

REF: 3.3

TOP: Surface Area

OBI: Measurement | Algebra

5. ANS:

Convert the height of the box to feet:
30 in + 12 in/ft = 2.5 ft

Calculate the volume.

$$V = hw^2$$

$$V = 7 \times 5 \times 2.5$$

$$V = 87.5 \text{ cu ft}$$

The volume of the box is 87.5 cu ft.

PTS: 1 DIF: Easy

LOC: M-SO2 | M-SO3

REF: 3.4

TOP: Volume

OBI: Measurement

KEY: Converting between imperial units

PROBLEM

1. ANS:

a) Convert the tank's capacity to US gallons.

$$1 \text{ US gal} \approx 3.8 \text{ L}$$

$$1 \text{ L} \approx \frac{1}{3.8} \text{ US gal}$$

$$55 \text{ L} = 55 \times \frac{1}{3.8}$$

$$55 \text{ L} = 14.5 \text{ US gal}$$

The gas tank will hold 14.5 US gallons.

Calculate the cost of filling the tank.

$$14.5 \text{ US gal} \times \$3.19/\text{US gal} = \$46.26$$

It will cost Rory \$46.26 to fill his car's gas tank.

b) Calculate the gas tank's capacity in British gallons.

$$1 \text{ British gal} \approx 4.5 \text{ L}$$

$$1 \text{ L} \approx \frac{1}{4.5} \text{ British gal}$$

$$55 \text{ L} \approx 55 \times \frac{1}{4.5}$$

$$55 \text{ L} \approx 12.2 \text{ British gal}$$

The gas tank will hold 12.2 British gallons.

Calculate the cost of filling the tank.

$$12.2 \text{ British gal} \times \$8.06/\text{US gal} = \$98.51$$

It will cost Rory \$98.51 to fill his car's gas tank in England.

PTS: 1 DIF: Moderate

LOC: M-SO1 | N-SO1

KEY: Converting from SI to imperial units

REF: 3.4

TOP: Volume

OBI: Measurement | Number

2. ANS:

a) Convert the dimensions of the room to feet, using decimals.

One side of the room is the same length as the opposite side of the room. You just have to add in twice the depths of the closets.

Calculate the perimeter of the whole room.

$$P = 2(\text{side length} + \text{bottom closet depth}) + 2(\text{top length} + \text{side closet depth}) - \text{door width}$$

$$P = 2(9.5 + 3) + 2(14 + 3) - 3$$

$$P = 56$$

You will need 56' of baseboard to finish the room.

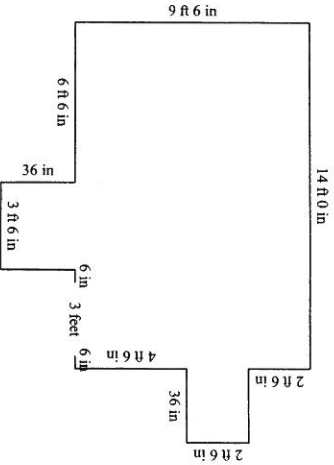
b) Since the perimeter of the room is 56 feet, you will need to buy 56 feet of baseboard.

$$56 \times \$1.64 = \$91.84$$

It will cost \$91.84 to buy baseboard for the room.

Alternative Solution

a) The perimeter of the room can be calculated by starting at one corner and adding each side length. Add feet to feet and inches to inches.



Add feet to feet and inches to inches.
Feet:

5

$$9 + 14 + 3 + 6 + 2 + 4 + 2 = 40 \text{ ft}$$

Inches:

$$6 + 0 + 36 + 36 + 6 + 6 + 36 + 36 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 192 \text{ in}$$

Convert inches to feet and inches.

$$192 + 12 = 16 \text{ ft } 0 \text{ in}$$

Add this to the measure in feet.

$$40 \text{ ft} + 16 \text{ ft } 0 \text{ in} = 56 \text{ ft } 0 \text{ in}$$

Since the perimeter of the room is 56 ft 0 in, you will need to buy 56 feet of baseboard.

$$56 \times \$1.64 = \$91.84$$

It will cost \$91.84 to buy baseboard for the room.

PTS: 1 DIF: Moderate REF: 3.1 OBI: Measurement
 LOC: M-SO3 TOP: Systems of Measurement
 KEY: Perimeter | Converting between imperial measurements

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