

5.1 HOMEWORK HANDOUT: THE METRIC SYSTEM

PART A

1. Use a **conversion factor** to express the following measurements to the indicated units.

- | | | | |
|------------------|-----------------|-----------------|---------------|
| a) 2.5kg in g | b) 2 438m in km | c) 3.2cm in mm | d) 49mm in cm |
| e) 165 cm in m | f) 791g in kg | g) 1 134m in km | h) 1.3km in m |
| i) 11 428mL in L | j) 3.8m in cm | k) 4.7cm in mm | l) 0.8m in cm |

2. Express the following measurements of **area** to the indicated units.

- | | | |
|------------------------------------|--------------------------------------|---------------------------------------|
| a) 50 hectares to km ² | b) 1850 hectares to km ² | c) 0.935 km ² to hectares |
| d) 83.5km ² to hectares | e) 0.057 hectares to km ² | f) 0.9225 km ² to hectares |

3. Express the following measurements of **mass** to the indicated units.

- | | | | |
|--------------------|----------------------|-----------------------|-------------------|
| a) 350kg to tonnes | b) 2.52 tonnes to kg | c) 0.051 tonnes to kg | d) 10kg to tonnes |
|--------------------|----------------------|-----------------------|-------------------|

4. Express the following measurements of **volume** to the indicated units.

- | | | | | |
|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|
| a) 450mL to cm ³ | b) 50cm ³ to mL | c) 13L to cm ³ | d) 0.55L to cm ³ | e) 72.5cm ³ to L |
|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|

PART B

5. Use the method of your choice to express the following measurements to the indicated units.

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|------------------|-------------------|-----------------|-------------------|
| a) 9.5dag to dg | b) 20.6 hL to L | c) 1.5hg to dg | d) 17.64dg to cg |
| e) 914.5cL to kL | f) 10.5kL to mL | g) 0.2hm to m | h) 1.6dal to dl |
| i) 86mg to kg | j) 17.29km to cm | k) 1.59cm to mm | l) 17.2L to cL |
| m) 1.2kL to dL | n) 18.88km to dam | o) 16mg to dag | p) 13 500mL to hL |

ANSWERS

1. a) 2 500g b) 2.438km c) 32mm d) 4.9cm e) 1.65m f) 0.791kg g) 1.134km h) 1 300m i) 11.428L
k) 47mm l) 80cm
2. a) 0.5km² b) 18.5km² c) 93.5 hectares d) 8350 hectares e) 0.00057km² f) 92.25 hectares
3. a) 0.350 tonnes b) 2 520kg c) 51kg d) 0.010 tonnes
4. a) 450cm³ b) 50mL c) 13 000cm³ d) 550cm³ e) 0.0725L
5. a) 950dg b) 2060L c) 1500 dg d) 176.4cg e) 0.009145 kL f) 10 500 000mL g) 20m h) 160dL
i) 0.000086kg j) 1 729 000cm k) 15.9mm l) 1 720cL m) 12 000dL n) 1 888dam o) 0.0016dag p) 0.135hL

HOMEWORK HANDOUT: CONVERTING BETWEEN IMPERIAL AND METRIC

PART A

1. Convert into centimetres. Round to 2 decimal places.

- a) 5 in. b) 7 in. c) 12.5 in. d) 2 ft. 1 in. e) 6 yd. f) 21 yards

2. Convert into inches. Round to 2 decimal places.

- a) 20 cm b) 7 cm c) 125 cm d) 5.1 m e) 21.5 m f) 0.6 m

3. Convert into pounds. Round to 2 decimal places.

- a) 7 kg b) 10.5 kg c) 0.2 kg d) 3400 g e) 9.21 kg f) 1 tonne

4. Convert to kg. Round to 2 decimal places.

- a) 1.1 lb b) 3 lb c) 2 stone d) 3 st. 2 lb. e) 7 st. 5 lb. f) 6 oz.

5. Convert into litres. Round to 2 decimal places.

- a) 8 gallons b) 16.5 gallons c) 5 pints d) 4 gallons 1 pint

6. Convert into gallons. Round to 2 decimal places.

- a) 6 litres b) 0.5 litres c) 7.8 litres d) 25 litres

7. Convert into pints. Round to 2 decimal places.

- a) 4 litres b) 200 ml c) 4.3 l d) 130 litres

PART B

8. For each pair of measurements, determine the largest value. Show your work.

- a) 2 m or 7 feet b) 5.2 m or 6 yards c) 4 feet or 110 cm
d) 15 km or 9 miles e) 2 lb or 30 ounces f) 20 lb or 7 kg
g) 2 stone or 400 oz. h) 250 oz. or 8.5 kg i) 6 gallons 1 pint or 25 l
j) 12 gallons or 90 pints k) 24.5 gal. or 100 l l) 5 litres or 9 pints

9. The speed limit on a British motorway is 70 mph. Pierre's car only shows km/h on the speedometer. If the speedometer reads 120 km/h, are they speeding?

10. Briony is baking a cake. The recipe needs 5 ounces of butter for the icing and 6 ounces of butter for the cake batter. Briony has a 300 g block of butter. Do they have enough butter to make the cake and the icing?

11. A restaurant sells 500 ml bottles of coke for \$2 or a pint of fountain coke for \$2.25. Which is the best value?

12. Fill in the blanks by making the required conversions. Round to 2 decimal places.

- a) 4.5 in. = _____ cm b) 2 km = _____ mi. c) 3 yd. = _____ m

- d) 18 ft. = _____ m e) 15 m = _____ ft. f) 13.5 cm = _____ in.

13. Fill in the blanks by making the required conversions. Round to 2 decimal places.

- a) 1.5 oz. = _____ g b) 3 kg = _____ lbs c) 16.5 g = _____ oz.

14. Fill in the blanks by making the required conversions. Round to 2 decimal places.

- a) 16 l = _____ quarts b) 17 tsp = _____ ml c) 9 ml = _____ Tbsp
 d) 8 cups = _____ l e) 21.5 Tbsp = _____ ml f) 8.5 l = _____ gallons
 g) 20.5 fl.oz. = _____ ml h) 14.5 gal. = _____ l i) 10 quarts = _____ l

PART C

15. Fill in the blanks by making the required conversions. Round to 2 decimal places.

- a) $4 \text{ cm}^2 = \text{_____ in.}^2$ b) $10 \text{ ft.}^2 = \text{_____ m}^2$ c) $2 \text{ m}^2 = \text{_____ ft.}^2$
 d) $19 \text{ m}^2 = \text{_____ yd.}^2$ e) $12 \text{ yd.}^2 = \text{_____ m}^2$ f) $6 \text{ m}^2 = \text{_____ ft.}^2$

16. Fill in the blanks by making the required conversions. Round to 2 decimal places.

- a) $1.5 \text{ yd.}^3 = \text{_____ m}^3$ b) $13.5 \text{ ml} = \text{_____ in.}^3$
 c) $8.5 \text{ ft.}^3 = \text{_____ m}^3$ d) $15.5 \text{ m}^3 = \text{_____ ft.}^3$

ANSWERS

- 1) a) 12.7 b) 17.78 c) 31.75 d) 63.5 e) 548.64 f) 1920.24** 2) a) 7.87 b) 2.76 c) 49.21
 d) 200.79 e) 846.46 f) 23.62 **3) a) 4.41 b) 23.14 c) 0.44 d) 7.5 e) 20.3 f) 2204.63**
 4) a) 0.5 b) 1.35 c) 12.8 d) 192.91 e) 47.07 f) 0.17 **5) a) 30.4 b) 62.7 c) 2.4 d) 4.28**
 6) a) 1.58 b) 0.13 c) 2.05 d) 6.58 **7) a) 8.33 b) 0.42 c) 8.96 d) 270.83**
 8) a) 7 feet b) 6 yards c) 4 feet d) 15 km e) 2 lb f) 20 lb g) 2 stone h) 8.5 kg
 i) 6 gallons 1 pint j) 12 gallons k) 24.5 gal. l) 9 pints
9) 120 km/h=75 mph, yes he is speeding. 10) 11 oz = 312 grams, no she doesn't have enough
11) bottle= 250 ml/\$, fountain 480 ml/\$2.25, 213 ml/\$, bottle drink is better deal
 12) a) 11.43 b) 1.23 c) 2.74 d) 5.49 e) 49.21 f) 5.31 **13) a) 42.57 b) 2.2 c) 0.58**
 14) a) 16.67 b) 85 c) 0.6 d) 1.92 e) 322.5 f) 2.24 g) 61.5 h) 55.1 i) 9.6
15) a) 0.62 b) 0.93 c) 21.53 d) 22.72 e) 10.03 f) 64.58 16) a) 1.15 b) 0.82 c) 0.24 d) 547.38