KEY

First Name:_____ Last Name:_____

L03 - FQ – Linear Unit Conversions

S.I. to S.I		Exact?
1 km	1000 m	✓
1 m	100 cm	✓
1 cm	10 mm	✓

Imperial to Imperial		Exact?
1 mi.	1760 yd.	✓
1 yd.	3 ft.	✓
1 ft.	12 in.	✓

Imperial to S.I.		Exact?
1 mi.	1.609 km	x
1 yd.	0.9144 m	x
1 ft.	30.48 cm	✓
1 in.	2.54 cm	✓

Q1: Convert 15 meters to yards.

a. 13.7 yd.
b. 14.1 yd.
c. 15.9 yd.
d. 16.4 yd.

$\frac{x}{1\,yd} = \frac{15\,m}{0.9144\,m}$

$x = 16.4\,yd$

Q2: Convert 18 inches to millimeters, to the nearest millimeter.

(Record your answer in the Numerical Response boxes below)

4	5	7	

Plan: inch → cm → mm

$\frac{18\,in}{1} \times \frac{2.54\,cm}{1\,in} \times \frac{10\,mm}{1\,cm} = 457.2\,mm \approx 457\,mm$

Q3: Using ***Proportional Reasoning***, convert 18 yards to cm. *(2 marks)*

Plan: yd → m → cm

$\frac{18\,yd}{1\,yd} = \frac{x}{0.9144\,m}$

$x = 16.4592\,m$

$\frac{16.4592\,m}{1\,m} = \frac{x}{100\,cm}$

$x = 1645.92\,cm$

Q4: Using ***Unit Analysis***, convert 20 inches to meters. *(2 marks)*

Plan: in → cm → m

$\frac{20\,in}{1} \times \frac{2.54\,cm}{1\,in} \times \frac{1\,m}{100\,cm} = \frac{50.8\,m}{100} = 0.508\,m$

MARKING:

Beginning	0.0 – 2.5
Progressing	3.0 – 4.0
Competent	4.5 – 5.5
Exemplary	6.0