Unit Analysis Home Work Problems **Name:** Key

For 1–8, show all of your work for each problem by using HORIZONTAL FRACTION BARS.

1. **4 in is how many cm?** **#1 Answer:** 10.16 cm

$\frac{4\text{in}}{1} \cdot \frac{2.54\text{cm}}{1\text{in}}$

2. **15 cm is how many in?** **#2 Answer:** $\approx$ 5.91 in

$\frac{15\text{cm}}{1} \cdot \frac{1\text{in}}{2.54\text{cm}}$

3. **121 oz is how many cups?** **#3 Answer:** 15.125 c

$\frac{121\text{oz}}{1} \cdot \frac{1\text{c}}{8\text{oz}}$

4. **5 mi is how many yds?** **#4 Answer:** 8,800 yds

$\frac{5\text{mi}}{1} \cdot \frac{5{,}280\text{ft}}{\text{mi}} \cdot \frac{1\text{yd}}{3\text{ft}}$

5. **30 ft is how many yds?** **#5 Answer:** 10 yds

$\frac{30\text{ft}}{1} \cdot \frac{1\text{yd}}{3\text{ft}}$

6. **3.62 m is how many cm?** **#6 Answer:** 362 cm

$\frac{3.62\text{m}}{1} \cdot \frac{100\text{cm}}{\text{m}}$

7. **78 oz is how many lbs?** **#7 Answer:** 4.875 lbs

$\frac{78\text{oz}}{1} \cdot \frac{1\text{lb}}{16\text{oz}}$

8. **6 gal is how many qts?** **#8 Answer:** 24 qts

$\frac{6\text{gal}}{1} \cdot \frac{4\text{qts}}{\text{gal}}$

For 9–12, use unit analysis to find the equal rate. Show all of your work for each problem by using HORIZONTAL FRACTION BARS. Make sure you have the correct UNITS.

9. $\frac{90\ in}{\text{min}}$ **is how many** $\frac{ft}{\text{sec}}$ **?** **#9 Answer:** $\frac{1.25\ ft}{sec}$

$\frac{90\ in}{min} \cdot \frac{1\ ft}{12\ in} \cdot \frac{1\ min}{60\ sec}$

10. $\frac{\$27}{hr}$ **is how many** $\frac{\$}{\text{min}}$ **?** **#10 Answer:** $\frac{\$.45}{min}$ or $\frac{45¢}{min}$

$\frac{\$27}{hr} \cdot \frac{1\ hr}{60\ min}$

11. $\frac{12\ qt}{\text{min}}$ **is how many** $\frac{gal}{\text{min}}$ **?** **#11 Answer:** $\frac{3\ gal}{min}$

$\frac{12\ qts}{min} \cdot \frac{1\ gal}{4\ qts}$

12. $\frac{1\ mi}{3\ \text{min}}$ **is how many** $\frac{mi}{hr}$ **?** **#12 Answer:** $\frac{20\ mi}{hr}$

$\frac{1\ mi}{3\ min} \cdot \frac{60\ min}{hr}$

13. $\frac{1\ mi}{300\ \text{sec}}$ **is how many** $\frac{mi}{hr}$ **?** **#13 Answer:** $\frac{12\ mi}{hr}$

$\frac{1\ mi}{300\ sec} \cdot \frac{60\ sec}{min} \cdot \frac{60\ min}{hr}$

14. $\frac{1\ qt}{\text{min}}$ **is how many** $\frac{gal}{week}$ **?** **#14 Answer:** $\frac{2,520\ gal}{wk}$

$\frac{1\ qt}{min} \cdot \frac{1\ gal}{4\ qts} \cdot \frac{60\ min}{hr} \cdot \frac{24\ hrs}{day} \cdot \frac{7\ days}{wk} = \frac{10,080\ gal}{4\ wks}$