

Test 30

- 1) D $\frac{5 \text{ km}}{1} \times \frac{.62 \text{ mi.}}{1 \text{ km}} = 3.1 \text{ mi.}$
- 2) B $\frac{6 \text{ kg}}{1} \times \frac{2.2 \text{ lbs.}}{1 \text{ kg}} = 13.2 \text{ lbs.}$
- 3) A $\frac{3 \text{ yds.}}{1} \times \frac{.9 \text{ m}}{1 \text{ yd.}} = 2.7 \text{ m}$
- 4) B $\frac{6 \text{ mi.}}{1} \times \frac{1.6 \text{ km}}{1 \text{ mi.}} = 9.6 \text{ km}$
- 5) D $\frac{8 \text{ lbs.}}{1} \times \frac{.45 \text{ kg}}{1 \text{ lb.}} = 3.6 \text{ kg}$
- 6) E $\frac{6 \text{ m}}{1} \times \frac{1.1 \text{ yds.}}{1 \text{ m}} = 6.6 \text{ yds.}$
- 7) A $\frac{9 \text{ cm}}{1} \times \frac{.4 \text{ in.}}{1 \text{ cm}} = 3.6 \text{ in.}$
- 8) C $\frac{9 \text{ in.}}{1} \times \frac{2.5 \text{ cm}}{1 \text{ in.}} = 22.5 \text{ cm}$
- 9) E $\frac{3 \cancel{\text{ qt.}}}{1} \times \frac{1.06 \text{ qts.}}{1 \cancel{\text{ qt.}}} = 3.18 \text{ qts.}$
- 10) B $\frac{1 \text{ gal.}}{1} \times \frac{4 \text{ qts.}}{1 \text{ gal.}} \times \frac{.95 \text{ l}}{1 \text{ qt.}} = 3.8 \text{ liters}$
- 11) B
- 12) A
- 13) B
- 14) C $\frac{2 \text{ oz.}}{1} \times \frac{28 \text{ g}}{1 \text{ oz.}} = 56 \text{ g}$
- 15) D

Test 31

- 1) B
- 2) A
- 3) C $\sqrt[3]{27} = 3$
- 4) E $X^{3/3} = X^1 = X$
- 5) B $\sqrt[3]{125} = 5, 5^2 = 25$
- 6) A
- 7) D $2 \times 2 = 4$
- 8) B $\sqrt{5/30} + 12/30 = \sqrt{17/30}$
- 9) D $X^{(2+4)(1/2)} = X^3$
- 10) C $10^{2/3} + 10^3 = 10^{11/3}$
- 11) A $A = 4, B = 2$
- 12) B $A = X^{19/3}, B = X^{19}$
- 13) C $A = 3, B = 3$
- 14) C $A = 10^5, B = 10^5$
- 15) A $A = B^8, B = B^4$

Test 32

- 1) A
- 2) B
- 3) D
- 4) B
- 5) E
- 6) C
- 7) C
- 8) A
- 9) C
- 10) E
- 11) C $(2.5 \times 10^{-1})(1.3 \times 10^5) = (2.5 \times 1.3)(10^{-1} \times 10^5) = 3.25 \times 10^4$
- 12) D $(5 \times 10^7)(6.1 \times 10^{-1}) = (5 \times 6.1)(10^7 \times 10^{-1}) = 30.5 \times 10^6 = 3.05 \times 10^7$
- 13) C two significant digits
- 14) D two significant digits $(1.24 \times 4.7)(10^6 \times 10^3) = 5.828 \times 10^9 = 5.8 \times 10^9$
- 15) B three significant digits $(6.25 \div 3.241)(10^8 \div 10^4) = 1.93 \times 10^4$

Test 33

- 1) C
- 2) C
- 3) C
- 4) E
- 5) D
- 6) C $5^3 = 125$
- 7) A $4^3 = 64$
- 8) C $16 \overline{)34} \begin{array}{r} 2 \\ 32 \\ \hline 2 \end{array} \quad 4 \overline{)2} \begin{array}{r} 0 \\ 0 \\ \hline 2 \end{array} \quad 1 \overline{)2} \begin{array}{r} 2 \\ 2 \\ \hline 0 \end{array}$
- 9) E $32 \overline{)45} \begin{array}{r} 1 \\ 32 \\ \hline 13 \end{array} \quad 16 \overline{)13} \begin{array}{r} 0 \\ 0 \\ \hline 13 \end{array} \quad 8 \overline{)13} \begin{array}{r} 1 \\ 8 \\ \hline 5 \end{array} \quad 4 \overline{)5} \begin{array}{r} 1 \\ 4 \\ \hline 1 \end{array}$
 $2 \overline{)1} \begin{array}{r} 0 \\ 0 \\ \hline 1 \end{array} \quad 1 \overline{)1} \begin{array}{r} 1 \\ 1 \\ \hline 0 \end{array}$
- 10) B $144 \overline{)356} \begin{array}{r} 2 \\ 288 \\ \hline 68 \end{array} \quad 12 \overline{)68} \begin{array}{r} 5 \\ 60 \\ \hline 8 \end{array} \quad 1 \overline{)8} \begin{array}{r} 8 \\ 8 \\ \hline 0 \end{array}$
- 11) E $1 \times 6^2 + 2 \times 6^1 + 2 \times 6^0 = 1(36) + 2(6) + 2(1) = 36 + 12 + 2 = 50$
- 12) B $4 \times 12^2 + 11 \times 12^1 + 3 \times 12^0 = 4(144) + 11(12) + 3(1) = 576 + 132 + 3 = 711$
- 13) A $5 \times 12^2 + 2 \times 12^1 + 10 \times 12^0 = 5(144) + 2(12) + 10(1) = 720 + 24 + 10 = 754$
- 14) E $1 \times 3^2 + 2 \times 3^1 + 2 \times 3^0 = 1(9) + 2(3) + 2(1) = 9 + 6 + 2 = 17$
- 15) B $1 \times 7^3 = 1(343) = 343$