

## Ch 2 Test

1)  $5 \times 10^4$       2)  $3.2 \times 10^{-2}$       3)  $6.0 \times 10^2$       4)  $1.13 \times 10^3$   
 $\underbrace{5}_{50,000}$        $\underbrace{3.2}_{.032}$        $\underbrace{6.0}_{600}$        $\underbrace{1.13}_{1130}$

5)  $2.6 \times 10^{-3}$       6)  $4 \times 10^8$       7)  $7 \times 10^5$       8)  $9.32 \times 10^{-1}$   
 $\underbrace{2.6}_{.0026}$        $\underbrace{4}_{400,000,000}$        $\underbrace{7}_{700,000}$        $\underbrace{9.32}_{.932}$

9)  $0.0405$       10)  $200,000$       11)  $100,000$       12)  $334,000,000$   
 $4.05 \times 10^{-2}$        $2 \times 10^5$        $1 \times 10^5$        $3.34 \times 10^8$

13)  $83,000$       14)  $0.0022$       15)  $0.37$       16)  $140,000$   
 $8.3 \times 10^4$        $2.2 \times 10^{-3}$        $3.7 \times 10^{-1}$        $1.4 \times 10^5$

17)  $10^7 \cdot 10^6$       18)  $3.4^3 \cdot 3.4^6$       19)  $6^{-3} \cdot 6^8$       20)  $a^0 \cdot a^5$   
 $10^{7+6}$        $3.4^{3+6}$        $6^{-3+8}$        $a^{0+5}$   
 $10^{13}$        $3.4^9$        $6^5$        $a^5$

21)  $(-x)^7 \cdot (-x)^6$       22)  $2^6 \cdot 2^{-14}$       23)  $r^3 \cdot r^4 \cdot r^5$       24)  $3.2^{-2} \cdot 3.2^8$   
 $(-x)^{7+6}$        $2^{6+(-14)}$        $r^{3+4+5}$        $3.2^{-2+8}$   
 $(-x)^{13}$        $2^{-8}$        $r^{12}$        $3.2^6$

25)  $7^0 = 1$       26)  $8^{-4} = \frac{1}{8^4} = \frac{1}{4096}$       27)  $-9.3^0 = -1$

28)  $(-5.3)^0 = 1$       29)  $-6^{-3} = -\frac{1}{6^3} = -\frac{1}{216}$       30)  $3^{-4} = \frac{1}{3^4} = \frac{1}{81}$

31)  $-36^0 = -1$       32)  $9^{-2} = \frac{1}{9^2} = \frac{1}{81}$       33)  $7^{-2} = \frac{1}{7^2} = \frac{1}{49}$

34)  $2^{-4} = \frac{1}{2^4} = \frac{1}{16}$       35)  $5(7 \times 10^4)$       36)  $11(8 \times 10^2)$   
 $35 \times 10^4$        $88 \times 10^2$   
 $3.5 \times 10^5$        $8.8 \times 10^3$

$$37) (9 \times 10^{-5})(3 \times 10^{12})$$

$$27 \times 10^{-5+12}$$

$$27 \times 10^7$$

$$2.7 \times 10^8$$

$$40) \frac{6^{11}}{6^3} = 6^{11-3} = 6^8$$

$$41) \frac{c^8}{c^{-6}} = c^{8-(-6)} = c^{14}$$

$$42) \frac{(-3)^2}{(-3)^4} = (-3)^{2-4} = (-3)^{-2}$$

$$43) \frac{(-n)^4}{(-n)^9} = (-n)^{4-9} = (-n)^{-5}$$

$$44) \frac{2.8^7}{2.8^4} = 2.8^{7-4} = 2.8^3$$

$$45) \frac{1.4^{-9}}{1.4^2} = 1.4^{-9-2} = 1.4^{-11}$$

$$46) \frac{6 \times 10^3}{8 \times 10^6} = 0.75 \times 10^{3-6}$$

$$= 0.75 \times 10^{-3}$$

$$47) \frac{1.4 \times 10^8}{2.3} = 0.61 \times 10^8$$

$$= 6.1 \times 10^7$$

$$= 7.5 \times 10^{-4}$$

$$48) \frac{2.5 \times 10^6}{4.1 \times 10^3} = 0.61 \times 10^{6-3}$$

$$= 0.61 \times 10^3$$

$$= 610$$

round to 600

$$49) \frac{9 \times 10^6}{5 \times 10^4} = 1.8 \times 10^{6-4}$$

$$= 1.8 \times 10^2$$

$$= 180$$

round to 200

$$51) 14(4.2 \times 10^6)$$

$$58.8 \times 10^6$$

$$5.88 \times 10^7$$

$$52) 1.9 \times 10^3$$

$$1.09 \times 10^3$$

$$2 \times 10^2$$

$$2 \times 10^{-2}$$

$$53) 1.24 \times 10^{-6}$$

$$1.43 \times 10^{-3}$$

$$2.14 \times 10^{-3}$$

$$1.44 \times 10^{-2}$$