Key Concepts Test #2 - M311 Sp12

Ex1: Convert to a decimal

a) $1\frac{1}{12}$

$12 \overline{)11.00}$ → $0.91\overline{6}$

-108

20

-12

80

-72

8

b) $\frac{5}{8}$

$8 \overline{)5.000}$ → 0.625

-48

20

-16

40

-40

0

c) $\frac{6}{7}$ (Round 4 decimals)

$7 \overline{)6.0000}$ → ≈ 0.8571

-56

40

-35

50

-49

10

Ex2: Compare <, >, =

a) $\frac{5}{4}$ (60) $\boxed{>}$ $\frac{7}{12}$ (49)

b) $1\frac{5}{8}$ (3) $+ 2\frac{1}{3}$ (8) $\boxed{>}$ $4\frac{1}{3}$ (8) $- 1\frac{5}{8}$ (3)

$= 1\frac{15}{24} + 2\frac{8}{24}$

$= 3\frac{23}{24}$

$= 3\frac{8}{24} - 1\frac{15}{24}$

$= 3\frac{32}{24} - 1\frac{15}{24}$

$= 2\frac{17}{24}$

c) $1\frac{2}{3} \cdot 5 \;\boxed{=}\; 5 \div \frac{3}{5}$

$= \frac{5}{3} \cdot \frac{5}{1}$

$= \frac{25}{3} = 8\frac{1}{3}$

$= \frac{5}{1} \cdot \frac{5}{3}$

$= \frac{25}{3} = 8\frac{1}{3}$

Ex 3: Solve & Check

a) $\frac{2}{3} + x = 5\frac{1}{3}$ (4) $+\frac{3}{3} = \frac{4}{3}$

$-\frac{2}{3} \qquad -\frac{2}{3}$

$\boxed{X = 4\frac{2}{3}}$ $= \frac{14}{3}$

✓ $\frac{2}{3} + \left(\frac{14}{3}\right) \stackrel{?}{=} 5\frac{1}{3}$

$\frac{16}{3} = \frac{16}{3}$ ✓

b) $\frac{1}{4} + x = \frac{7}{8}$

$-\frac{1}{4} \qquad = -\frac{1}{4} \cdot 2 = \frac{2}{8}$ (·2)

$\boxed{X = \frac{5}{8}}$

✓ $\frac{1}{4} + \frac{5}{8} \stackrel{?}{=} \frac{7}{8}$ (·2)

$\frac{2}{8} + \frac{5}{8} \stackrel{?}{=} \frac{7}{8} \Rightarrow \frac{7}{8} = \frac{7}{8}$ ✓

Concepts T2 M311 - Sp12 p.2

Ex. 4: Add/Subt.

a) $5102.02 + 953.8$

$$\begin{array}{r} 5102.02 \\ +\ 953.80 \\ \hline 6055.82 \end{array}$$

b) $45084.2 - 399.98$

$$\begin{array}{r} 49\,7\,3\,1\,1 \\ 45084.2^{2}0 \\ -\ 399.98 \\ \hline 44684.2^{2} \end{array}$$

Ex 5: Multiply

a) $(0.12)(0.007)$

$12 \times 7 = 84$ w/ 5 decimals

$= 0.00084$

b) $(2.57)(0.36)$

$$\begin{array}{r} {}^{3}{}^{2}2.57 \\ \times 0.36 \\ \hline 1542 \\ +\ 7710 \\ \hline 0.9252 \end{array}$$

$= 0.9252$

Ex 6: Divide

a) $15 \div 30$

$$30 \overline{)\,15.00} \quad 0.5$$

b) $1.2 \div 11$

$$11 \overline{)\,1.20000} \quad 0.10909$$

-11

10

-0

100

-99

10

-0

100

c) $2 \div 0.04$

$$0.04 \overline{)\,2.00} \quad 50.$$

Ex 7: Write in words 97,503.0243

Ninety-seven thousand, five hundred three and two hundred forty-three ten thousandths

Ex 8: Two hundred seven million, seven hundred thousand, forty-five and one hundred ninety-two millionths

$207,700,045.000192$

Concepts T2 M311 - Sp. 12 p.3

Ex9: Round 299,473.089 to the (tens, hundredths; ten thousands)

a) tens ⇒ 299,470.000

b) ten thousands ⇒ 300,000.000

rounds through

c) hundredths ⇒ 299,473.090

Ex.10: Compare w/ <, > or =

a) 0.025 < 0.035

b) 2.035 > 1.035

c) $\frac{2}{5}$ = 0.4

$$5\overline{)2.00}\quad 0.4$$

Ex11: Solve & check

a) $0.92 + x = 2.30$

$-0.92 \quad = -0.92$

$x = 1.38$

$0.92 + (1.38) \stackrel{?}{=} 2.3$

$2.30 = 2.3$ ✓

b) $50 + x = 172.3$

$-50 \quad = -50.0$

$x = 122.3$

$50 + (122.3) \stackrel{?}{=} 172.3$

$172.3 = 172.3$ ✓

x12: Whole or Counting? Why?

$\{0, 17, 38, 107, 984\}$

Not counting b/c it contains zero!

Concepts T2 M311 – Sp12 p.4

Ex 13: Multiply

a) $100 \times 2{,}000$

2×1
w/ 5 zeros
$= \boxed{200{,}000}$

b) $500 \times 25{,}000$

$25 \times 5 = 125$
w/ 5 zero
$= \boxed{12{,}500{,}000}$

Ex 14: Divide

a) $12{,}000{,}000 \div 2{,}000$

$12 \div 2$
cross out 3 zeros
$= \boxed{6000}$

$\frac{12000\cancel{000}}{2\cancel{000}}$

b) $10{,}000 \div 100$

$1 \div 1$
cross out 2 zeros
$= \boxed{100}$

$\frac{10000}{100}$

Ex 15: Solve & check

a) $4875 + x = 94975$

$-4875 \quad = -4875$

$\boxed{x = 90{,}100}$

$4875 + 90{,}100 \stackrel{?}{=} 94975$
$94975 = 94975$ ✓

b) $950 = x + 352$

$-352 = -352$

$\boxed{598 = x}$

$950 = (598) + 352$
$950 = 950$ ✓

c) $x - 2 = 9$

$+2 = +2$

$\boxed{x = 11}$

$(11) - 2 \stackrel{?}{=} 9$
$9 = 9$ ✓

Ex 16: Setup: I go to the store to buy bread, milk, cheese, salt and flour. How much will I pay?

bread
milk
cheese
salt
flour
Total = bread + milk + cheese + salt + flour

Concepts T2 M311 – Sp12 p.5

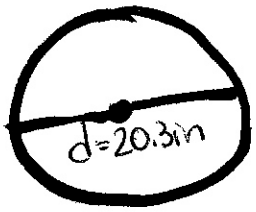
Ex 17: Find area h=¾ in, b=2 in.

$A = \frac{1}{2}bh$

$= \frac{1}{2}(2)(\frac{3}{4})$

$= 1(\frac{3}{4}) = \boxed{\frac{3}{4}\text{ in.}^2}$

Ex 18: Circumference



$\pi = 3.14$

$C = \pi d$

$= (3.14)(20.3)$

$$\begin{array}{r} 3.14 \\ \times\ 20.3 \\ \hline 942 \\ 0000 \\ +\ 62800 \\ \hline 63.742 \end{array}$$

$\boxed{C = 63.742\text{ in.}}$

Ex 19: Total Area of CA & NV

CA Area = 163,695 mi^2

NV Area = 110,560 mi^2

Total = CA + NV = 163,695 + 110,560

$= \boxed{274,255\ mi.^2}$