



CHAPTER TEST: FRACTIONS, DECIMALS, SIGNIFICANT FIGURES

NAME		DATE	
CLASS		SCORE	
PARENT'S SIGNATURE		MR EMMANUEL RECANEL	

PART 1: USING CALCULATOR

1. Solve $\frac{\sqrt[3]{39} + \sqrt{12}}{\pi - \sqrt{5\frac{2}{9} \times \frac{1}{4} + 6.7}}$

(a) Write your answer as it appears in your calculator. 21.95923461

(b) Write your answer correct to

(i) nearest whole 22

(ii) 1 decimal place 22.0

(iii) 3 significant figures. 22.0

(iv) 4 significant figures 21.96

(v) 1 significant figure 20

2. Solve $\frac{(16.874)^3 + \sqrt{2000} \times [7.6 - (5.8)^2]}{9.6 \times 4.791 \times 0.235}$.

(a) Write your answer as it appears in your calculator. 336.7740963

(b) Write your answer correct to

(i) nearest whole 337

(ii) 2 decimal places 336.77

(iii) 5 significant figures. 336.77

(iv) 3 significant figures 337

(v) 1 significant figure 300

7. Do the following operations.

$$(a) \quad 5\frac{2}{7} + 14\frac{1}{7} = 19\frac{3}{7}$$

$$(e) \quad 2\frac{1}{4} - 1\frac{1}{10} = 1\frac{3}{20}$$

$$(b) \quad 16 - 3\frac{2}{5} - 7\frac{3}{4} = 4\frac{17}{20}$$

$$(f) \quad \frac{1}{3} + \frac{4}{9} \times \left(\frac{1}{2}\right)^2 = \frac{4}{9}$$

$$(c) \quad 5\frac{3}{7} \times \frac{7}{10} = 3\frac{4}{5}$$

$$(g) \quad 1\frac{1}{2} \times 2\frac{2}{3} \times 3\frac{3}{4} \times 4\frac{4}{5} = 72$$

$$(d) \quad 22\frac{1}{2} \div 2\frac{1}{4} = 10$$

$$(h) \quad \frac{2}{3} \div \frac{3}{2} \div \frac{5}{8} = \frac{32}{45}$$

8. Do the following decimals.

$$(a) \quad 1.845 \div 0.15 = 12.3$$

$$(c) \quad 4.3 - 3.904 = 0.396$$

$$(b) \quad 0.27 \times 0.08 = 0.0216$$

$$(d) \quad 14.72 + 1.2 + 0.034 = 15.954$$

9. (a) Convert $\frac{8}{15}$ into a decimal. Write it in its short form. **Answer: $0.5\bar{3}$**

(b) Change $4.2333\dots$ into a (rational) fraction form.

$$10n = 42.33333\dots$$

$$\text{Let } n = 4.23333\dots$$

$$9n = 38.1$$

$$n = \frac{38.1}{9}$$

$$n = \frac{381}{90} = 4\frac{7}{30}$$

(c) Find the difference between $\frac{5}{9}$ and the decimal $0.16161616\dots$

$$0.16161616\dots = \frac{16}{99}$$

$$\text{difference means to subtract, so: } \frac{5}{9} - \frac{16}{99} = \frac{55}{99} - \frac{16}{99} = \frac{39}{99} = \frac{13}{33}$$

10. A class has 40 students. $\frac{5}{8}$ of the class are boys. $\frac{3}{5}$ of the girls wear eyeglasses. How many girls do not wear eyeglasses?

If $\frac{5}{8}$ are boys, then $\frac{3}{8}$ are girls. So $\frac{3}{8}$ of $40 = 15$ girls

If $\frac{3}{5}$ of the girls are wearing glasses, $\frac{2}{5}$ of the girls are not wearing glasses.

So, $\frac{2}{5}$ of $15 = 6$ girls are not wearing glasses.

11. The dimensions of a rectangular field are 20 meters and 15 meters, correct to the nearest meter.

$$1 \text{ meter} \div 2 = \pm 0.5 \text{ allowance}$$

(a) Find the upper and lower boundaries of the length of the rectangle.

$$\text{Answer: } \underline{19.5} \leq l \text{ m} < \underline{20.5}$$

(b) Find the upper and lower boundaries of the width of the rectangle.

$$\text{Answer: } \underline{14.5} \leq w \text{ m} < \underline{15.5}$$

(c) Find the upper and lower boundaries of the **perimeter** of the rectangular field.

$$\text{Perimeter} = 2l + 2w$$

$$\begin{aligned} \text{LB}_{\text{perimeter}} &= 2(19.5) + 2(14.5) \\ &= 68 \end{aligned}$$

$$\begin{aligned} \text{UB}_{\text{perimeter}} &= 2(20.5) + 2(15.5) \\ &= 72 \end{aligned}$$

$$\text{Answer: } \underline{68} \leq P \text{ m} < \underline{72}$$

(d) Find the upper and lower boundaries of the **area** of the rectangular field.

$$\text{Area} = l \times w$$

$$\begin{aligned} \text{LB}_{\text{area}} &= 19.5 \times 14.5 \\ &= 282.75 \end{aligned}$$

$$\begin{aligned} \text{UB}_{\text{area}} &= 20.5 \times 15.5 \\ &= 317.75 \end{aligned}$$

$$\text{Answer: } \underline{282.75} \leq A \text{ m}^2 < \underline{317.75}$$

12. Leila's height is 1.58 m correct to the hundredths place.

Fabian's height is 1.8 m correct to the tenths place.

(a) Write the upper and lower boundaries of Leila's height.

$$\text{Answer: } \underline{1.575} \leq L \text{ m} < \underline{1.585}$$

(b) Write the upper and lower boundaries of Fabian's height.

$$\text{Answer: } \underline{1.75} \leq F \text{ m} < \underline{1.85}$$

(c) Find the largest possible difference of Leila's and Fabian's height.

$$\begin{aligned} \text{Largest possible difference} &= 1.85 - 1.575 \\ &= 0.275 \end{aligned}$$

13. Eight students are planning to share equally the cost of a CD player.
If one of them withdraws from the arrangement and the remaining students share equally the entire cost of the CD player, find the amount of increase that each student must pay then.

If 8 students will equally share the cost, each student will pay $\frac{1}{8}$ of the price of the CD.

If only 7 students will participate since 1 withdrew, each student will now pay $\frac{1}{7}$ of the price of the CD.

Hence, additional amount (of increase) = $\frac{1}{7} - \frac{1}{8} = \frac{1}{56}$

14. In a bag with small marbles, $\frac{1}{4}$ of the marbles are green, $\frac{1}{8}$ of them are blue, $\frac{1}{12}$ are yellow and the rest are white marbles. If there are 26 white marbles,
(a) How many marbles are there in the bag?
(b) How many blue marbles are there?

$$\begin{aligned} \text{Remaining white marbles} &= 1 - (\frac{1}{4} \text{ green} + \frac{1}{8} \text{ blue} + \frac{1}{12} \text{ yellow}) \\ &= 1 - \frac{11}{24} \\ &= \frac{13}{24} \end{aligned}$$

Since there are 26 white marbles, $13 \text{ unit} = 26$
 $1 \text{ unit} = 2$
 $24 \text{ units} = 48 \text{ marbles in total.}$

FREEBIE +3

How many **proper fractions (reduced form)** can you make using the digits from 1 to 9?

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8}, \frac{1}{9}$ $\frac{2}{3}, \frac{2}{5}, \frac{2}{7}, \frac{2}{9}$ $\frac{3}{4}, \frac{3}{5}, \frac{3}{7}, \frac{3}{8}$
 $\frac{4}{5}, \frac{4}{7}, \frac{4}{9}$ $\frac{5}{6}, \frac{5}{7}, \frac{5}{8}, \frac{5}{9}$ $\frac{6}{7}$
 $\frac{7}{8}, \frac{7}{9}$ $\frac{8}{9}$

Therefore, there are **27 reduced proper fractions**

FREEBIE +2

Find the value of the expression:

$$\begin{aligned} &\left(1 - \frac{1}{2}\right) \times \left(1 - \frac{1}{3}\right) \times \left(1 - \frac{1}{4}\right) \times \left(1 - \frac{1}{5}\right) \times \dots \times \left(1 - \frac{1}{15}\right) \times \left(1 - \frac{1}{16}\right) \\ &\left(1 - \frac{1}{2}\right) \times \left(1 - \frac{1}{3}\right) \times \left(1 - \frac{1}{4}\right) \times \left(1 - \frac{1}{5}\right) \times \dots \times \left(1 - \frac{1}{15}\right) \times \left(1 - \frac{1}{16}\right) \end{aligned}$$

$$\cancel{\left(\frac{1}{2}\right)} \times \cancel{\left(\frac{2}{3}\right)} \times \cancel{\left(\frac{3}{4}\right)} \times \cancel{\left(\frac{4}{5}\right)} \times \cancel{\left(\frac{5}{6}\right)} \times \cancel{\left(\frac{6}{7}\right)} \times \cancel{\left(\frac{7}{8}\right)} \times \cancel{\left(\frac{8}{9}\right)} \times \cancel{\left(\frac{9}{10}\right)} \times \cancel{\left(\frac{10}{11}\right)} \times \cancel{\left(\frac{11}{12}\right)} \times \cancel{\left(\frac{12}{13}\right)} \times \cancel{\left(\frac{13}{14}\right)} \times \cancel{\left(\frac{14}{15}\right)} \times \cancel{\left(\frac{15}{16}\right)}$$

ANS: $\frac{1}{16}$