High School
Mathematics Test 2014

Year 8	*Rational Numbers*	Non Calculator Section

Skills and Knowledge Assessed:
- Connect fractions, decimals and percentages and carry out simple conversions (ACMNA157)
- Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies (ACMNA183)
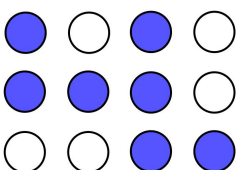- Investigate terminating and recurring decimals (ACMNA18

Name_____

Answer all questions in the spaces provided on this test paper by:
> *Writing the answer in the box provided.*
> *or*
> *Shading in the bubble for the correct answer from the four choices provided.*

*Show any working out on the test paper. Calculators are **not** allowed.*

1.	What is the simplest form of the fraction $\dfrac{15}{20}$?

☐ $\dfrac{2}{3}$ ☐ $\dfrac{3}{4}$ ☐ $\dfrac{4}{5}$ ☐ $\dfrac{5}{8}$

2.	$\dfrac{5}{10} - \dfrac{2}{10} = ?$

3.	$\dfrac{4}{8} + \dfrac{3}{8} = ?$

4.	Some buttons are shown. What fraction of the buttons are coloured?

☐ $\dfrac{5}{7}$ ☐ $\dfrac{5}{10}$

☐ $\dfrac{5}{12}$ ☐ $\dfrac{7}{12}$

5.	What is the value of 0.45 – 0.21?

6.	What fraction is equivalent to 0.36? (Answer in simplest form.)

7.	$\dfrac{2}{3} \times \dfrac{4}{5} = ?$ ☐ $\dfrac{3}{4}$ ☐ $\dfrac{2}{5}$ ☐ $\dfrac{8}{15}$ ☐ $1\dfrac{7}{8}$

8.	What is the sum of $\dfrac{5}{8}$ and $\dfrac{1}{4}$?

9.	$0.34 \times 6 = ?$

10.	$0.7 - 0.28 = ?$

11.	What is the value of $0.8 + 0.19 + 2.3$?

12.	$\dfrac{4}{5} \times \dfrac{5}{8} = ?$ ☐ $\dfrac{1}{5}$ ☐ $\dfrac{1}{4}$ ☐ $\dfrac{1}{2}$ ☐ 1

13.	Write $\dfrac{13}{20}$ as a decimal.

14.	What is 45% of $280.00?

15.	Luke spends 60 minutes playing out of the 400 minutes he spends at school. What percentage of the time does he spend playing?

16.	Decrease $160 by 60%.

17. Rewrite the following numbers in the spaces provided, in ascending order.

$$75\%, \quad \frac{7}{10}, \quad 0.72, \quad \frac{19}{25}$$

18. A recurring decimal is written as $0.\dot{8}0\dot{6}$.
The decimal could also be written as:

☐ 0.806806806… ☐ 0.806060606…. ☐ 0.80666666… ☐ 0.806

19. What fraction is halfway between $\frac{3}{8}$ and $\frac{3}{4}$?

20. If $34 \times 6 = 204$, what is the value of $0.34 \times 0.6 = ?$

☐ 0.002 04 ☐ 0.020 4 ☐ 0.204 ☐ 2.04

High School
Mathematics Test 2014

Year 8

Rational Numbers

**Calculator Allowed
Short Answer
Section**

Name_____

Answer all questions in the spaces provided on this test paper by:
   Writing the answer in the box provided.
        or
   Shading in the bubble for the correct answer from the four choices provided.
Show any working out on the test paper. Calculators are allowed.

|	
1.	Which fraction is equivalent to $\dfrac{5}{8}$? ⬭ $\dfrac{6}{10}$ ⬭ $\dfrac{10}{15}$ ⬭ $\dfrac{9}{16}$ ⬭ $\dfrac{15}{24}$
2.	Complete the improper fraction: $$1\dfrac{3}{5} = \dfrac{\square}{5}$$
3.	Complete the equivalent fraction: $$\dfrac{3}{5} = \dfrac{\square}{25}$$
4.	What is the value of 0.65 + 0.34?
5.	What fraction is equivalent to 45%? (Answer in simplest form.)
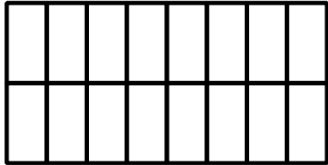
6.	$\dfrac{1}{6} \div \dfrac{4}{5} = ?$ ☐ $\dfrac{1}{6} \times \dfrac{4}{5}$ ☐ $\dfrac{1}{6} \times \dfrac{5}{4}$ ☐ $\dfrac{1}{6} + \dfrac{5}{4}$ ☐ $\dfrac{6}{1} \times \dfrac{4}{5}$
7.	Shade $\dfrac{5}{8}$ of the shape shown.
8.	What is the value of the 7 digit in the number 35.267? ☐ Units ☐ Tenths ☐ Hundredths ☐ Thousandths
9.	Which number is the largest? ☐ 0.035 ☐ 0.35 ☐ 0.305 ☐ 0.053
10.	When 2.947 is rounded to the nearest hundredth, the result is: ☐ 2.9 ☐ 3.0 ☐ 2.94 ☐ 2.95
11.	Which fraction is equal to 0.24 ? ☐ $\dfrac{6}{25}$ ☐ $\dfrac{3}{50}$ ☐ $\dfrac{3}{20}$ ☐ $\dfrac{3}{10}$
12.	Peter counts his T shirts and finds that 40% of them are red. If he owns 65 T shirts, how many are red?
13.	Find $\dfrac{5}{8}$ of 128 kg.
14.	When 3.45 is subtracted from 5.725, the result is

15.	Which of the points represent the position of 0.024 on the number line?
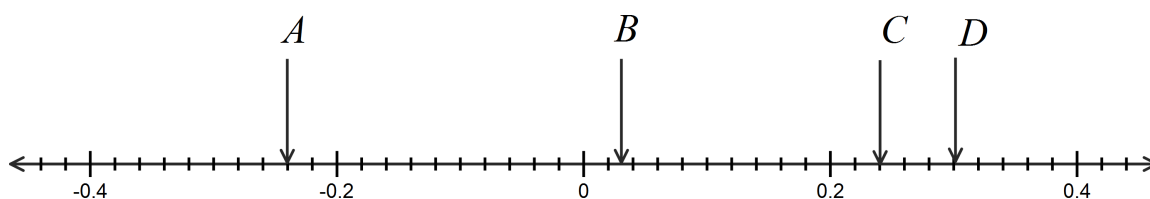
☐ Point *A*   ☐ Point *B*   ☐ Point *C*   ☐ Point *D*

16.	Which decimal is equal to $\dfrac{5}{11}$?

☐ $0.4\dot{5}$ ☐ $0.\dot{4}\dot{5}$ ☐ $0.\dot{5}$ ☐ $0.\dot{5}1\dot{1}$

17.	Mrs Ford asks four of her students; *"What part of an hour is 40 minutes?"* Which of the answers below is incorrect?

☐ "It is 40% of an hour."   ☐ "It is 0.65 of an hour."

☐ "It is $\dfrac{5}{6}$ of an hour."   ☐ "It is $66\dfrac{2}{3}\%$ of an hour."

18.	When running, Polly takes 1.24 breaths every second. How many breaths does she take in foot race that lasts for 1.6 minutes?

☐ 2 breaths   ☐ 20 breaths   ☐ 119 breaths   ☐ 120 breaths

19.	Paul puts 32% of the money he earns for working on Saturday into the bank. Paul put $38.40 into the bank. How much did he earn on Saturday?

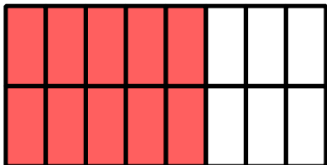| 20.	Jana fills the tank of her SUV with fuel before setting out on a day's travel. The fuel is costs 152.9 cents per litre and she puts 72.5 litres of fuel in the tank. What is the cost (in dollars, to the nearest 5 cents) of the fuel?

High School Mathematics Test 2014

Rational Numbers
ANSWERS

Non Calculator Section (1 mark each)

Q no		Answer
1.	$\dfrac{15}{20} = \dfrac{3}{4}$	2nd Answer
2.	$\dfrac{5}{10} - \dfrac{2}{10} = \dfrac{3}{10}$	
3.	$\dfrac{4}{8} + \dfrac{3}{8} = \dfrac{7}{8}$	
4.	7 out of 12 are coloured $= \dfrac{7}{12}$	4th Answer
5.	$0.45 - 0.21 = 0.24$	
6.	$0.36 = \dfrac{36}{100} = \dfrac{9}{25}$	
7.	$\dfrac{2}{3} \times \dfrac{4}{5} = \dfrac{8}{15}$	3rd Answer
8.	$\dfrac{5}{8} + \dfrac{1}{4} = \dfrac{5}{8} + \dfrac{2}{8} = \dfrac{7}{8}$	
9.	$0.34 \times 6 = 2.04$	
10.	$\begin{array}{r} 0.70 \,- \\ 0.28 \\ \hline 0.42 \end{array}$	
11.	$\begin{array}{r} 0.8 \\ 0.19 \\ 2.3 \quad + \\ \hline 3.29 \end{array}$	
12.	$\dfrac{4}{5} \times \dfrac{5}{8} = \dfrac{20}{40} = \dfrac{1}{2}$	3rd Answer
13.	$\dfrac{13}{20} = \dfrac{65}{100} = 0.65$	
14.	$45\% \text{ of } \$280.00 = \dfrac{\cancel{45}\;9}{\cancel{100}\;(5)} \times \dfrac{\cancel{280}\;14}{1}$ $= 9 \times 14$ $= \$126$	
15.	$\text{Percentage} = \dfrac{\cancel{60}\;15}{\cancel{400}\;(4)} \times \dfrac{\cancel{100}}{1}$ $= 15\%$	

16.	$\$160 \ \times \ \dfrac{40}{100} = 16 \times 4$ $\qquad\qquad\quad = \$64$	
17.	$75\% \ = \ 75\%$ $\dfrac{7}{10} = \ 70\%$ $0.72 \ = \ 72\%$ $\dfrac{19}{25} \times 100 = \ 19 \times 4 \ = 76\%$ In order $\dfrac{7}{10},$ $0.72,$ $75\%,$ $\dfrac{19}{25}$	
18.	$0.\dot{8}0\dot{6} \ = \ 0.806806806\ldots$	1st Answer
19.	Between $\dfrac{3}{8}$ and $\dfrac{6}{8} \ = \ \dfrac{9}{8} \ \div \ 2 \ = \dfrac{9}{8} \times \dfrac{1}{2} \ = \ \dfrac{9}{16}$	
20.	$0.34 \ \times \ 0.6 \ = \ 0.204$	3rd Answer

High School Mathematics Test 2014

Calculator Allowed Short Answer Section (1 mark each)

Q no		Answer
1.	$\dfrac{5}{8} = \dfrac{15}{24}$	4th Answer
2.	$1\dfrac{3}{5} = \dfrac{\mathbf{8}}{5}$	
3.	$\dfrac{3}{5} = \dfrac{15}{25}$	
4.	$0.65 + 0.34 = 0.99$	
5.	$45\% = \dfrac{45}{100} = \dfrac{9}{20}$	
6.	$\dfrac{1}{6} \div \dfrac{4}{5} = \dfrac{1}{6} \times \dfrac{5}{4} = \dfrac{5}{24}$	2nd Answer
7.	Any ten shaded.	
8.	3rd place after the point is Thousandths	4th Answer
9.	0.35 is largest	2nd Answer
10.	2.947 = 2.95 to nearest hundredth	4th Answer
11.	$0.24 = \dfrac{24}{100} = \dfrac{12}{50} = \dfrac{6}{25}$	
12.	40% of $65 = 0.4 \times 65$ $= 26\ T$ Shirts	
13.	$\dfrac{5}{8}$ of $128 = 5 \times 128 \div 8 = 80$ kg	
14.	$5.725 - 3.45 = 2.275$ (using calculator)	
15.	Point B	2nd Answer
16.	$\dfrac{5}{11} = 5 \div 11 = 0.454545\ldots = 0.\dot{4}\dot{5}$	2nd Answer

17.	$\dfrac{40}{60} = \dfrac{2}{3} = \dfrac{2}{3} \times 100 = \dfrac{200}{3} = 66\,\dfrac{2}{3}\%$	4th Answer
18.	Breaths = $1.24 \times 1.6 \times 60 = 119.04$	3rd Answer
19.	32% of earnings = 38.40 1% of earnings = $38.40 \div 32 = \$1.20$ 100% of earnings = $1.20 \times 100 = \$120.00$	
20.	Cost = $\$1.529 \times 72.5 = \$110.8525$ $= \$110.85$ (nearest 5 cents)	