

# SYDNEY TECHNICAL HIGH SCHOOL



## YEAR 7 COMMON TEST 2009

### MATHEMATICS

TIME ALLOWED : 70 Minutes

Name \_\_\_\_\_

Teacher \_\_\_\_\_

Section A	Section B	Section C	Section D	Section E	TOTAL
/ 14	/ 14	/ 14	/ 14	/ 10	/ 66

#### Instructions :


1. Attempt all questions
2. NO calculators
3. For the multiple choice questions, just write the letter of chosen answer in the space given
4. For all questions do your working in the space provided.

Do necessary working in space provided

Final answer in ANSWER column

**SECTION A - 14 Marks (1 mark each)**

**ANSWERS**

1. What is the Roman Numeral for 637 ?	
2. $8 \times [7 - 3 \times (12 - 2 \times 5)] =$	
3. $7.2 - 0.08 =$	
4. Write 28.949 correct to 1 decimal place	
5. $2\frac{5}{8} - 1\frac{1}{4} =$	
6. What is the reciprocal of $5\frac{3}{4}$ ?	
7. Arrange in ascending order: 0.503, 0.0503, 0.530, 0.5003	
8. $2\frac{1}{4} \div 2\frac{3}{8} =$	
9. What percentage is 19 of 950 ?	
10. What is the average of 8.8, 9.2 and 7.8 ?	
11. At roll call, there were 4 students absent and 21 students present. What percentage of the roll class was <b>absent</b> ?	
12. Graph the following set of numbers on the number line provided in answer column : $(2\frac{3}{4}, 1\frac{1}{2})$	

13. $4\frac{4}{5} \times 1\frac{3}{4} =$	
14. Which of the following is greater than $\frac{2}{3}$ ?  (A) $\frac{3}{5}$ (B) $\frac{5}{8}$ (C) $\frac{7}{10}$ (D) $\frac{7}{11}$	

### SECTION B - 14 Marks

(1 mark each)

### ANSWERS

1. The place value of 6 in the number 4.267 is  (A) $\frac{6}{1000}$ (B) $\frac{6}{100}$ (C) $\frac{6}{10}$ (D) 6	
2. If $p = \frac{1}{3}$ , $q = \frac{10}{3}$ and $r = \frac{3}{10}$ , then which of the following is true?  (A) $p > q$ and $q > r$ (B) $q > r$ and $r > p$ (C) $q > p$ and $p > r$ (D) $r > p$ and $p > q$	
3. The fraction $\frac{9}{16}$ is equivalent to  (A) $\frac{3}{4}$ (B) $\frac{18}{48}$ (C) $1\frac{7}{9}$ (D) $\frac{45}{80}$	
4. 24 % is closest to  (A) $\frac{1}{24}$ (B) $\frac{1}{5}$ (C) $\frac{1}{4}$ (D) $\frac{1}{3}$	
5. Which fraction is greater than $\frac{1}{2}$ ?  (A) $\frac{1}{3}$ (B) $\frac{4}{9}$ (C) $\frac{3}{7}$ (D) $\frac{3}{5}$	

6.. Which of these is the largest ?  (A) 40 %    (B) 0.04    (C) $\frac{11}{25}$ (D) 0.404	
7.. In a pile of 800 bricks, 20 are faulty. The percentage of faulty bricks is  (A) 0.025 %    (B) 0.4 %    (C) 2.5%    (D) 40%	
8.    I. $\frac{2}{3}$ is smaller than $\frac{3}{5}$  II. $\frac{2}{3}$ is smaller than $\frac{4}{9}$  Which of the above statements is true ?  (A) I only    (B) II only    (C) Both I and II    (D) Neither I nor II	
9. Find the difference in value between the 'threes' in 3.003	
10. Which of the following is <b>not</b> equal to $\frac{2}{3}$ ?  (A) $\frac{2+2}{3+3}$ (B) $\frac{2 \times 5}{3 \times 5}$ (C) $\frac{2^2}{3^2}$ (D) $\frac{2 \div 2}{3 \div 2}$	
11. The number 0.6 is closest to which of the following numbers ?  (A) 0.5    (B) 0.06    (C) 0.63    (D) 0.58	
12. Round off 0.0851 to the nearest hundredth	
13. What number is exactly halfway between $1\frac{1}{4}$ and $4\frac{1}{2}$ ?	

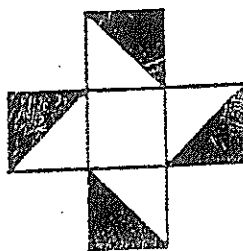
14. What fraction of this figure is shaded ?

(A)  $\frac{4}{5}$

(B)  $\frac{2}{3}$

(C)  $\frac{4}{9}$

(D)  $\frac{2}{5}$



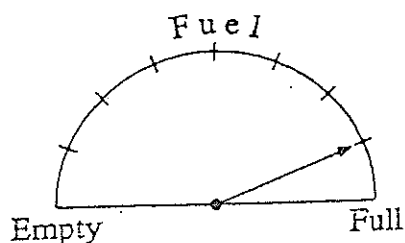
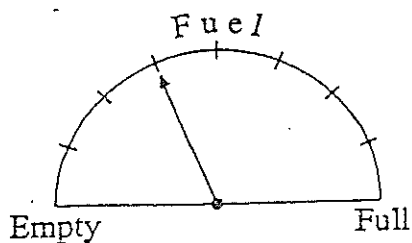
**SECTION C - 14 marks (1 mark each)**

**ANSWERS**

1. Convert  $14\frac{1}{2}\%$  as a simple fraction

2. If 10 % of  $\square = 7$ , what is 15 % of  $\square$  ?

3. The arrows indicate the fraction of fuel in two fuel tanks



The fractions shown are

(A)  $\frac{3}{8}$  and  $\frac{7}{8}$

(B)  $\frac{3}{8}$  and  $\frac{1}{8}$

(C)  $\frac{5}{8}$  and  $\frac{7}{8}$

(D)  $\frac{5}{8}$  and  $\frac{1}{8}$

4.  $\frac{7}{1000} + \frac{3}{10}$  is equal to

(A) 0.703

(B) 0.073

(C) 0.037

(D) 0.307

<p>5. Tania is taping songs onto a 90-minute cassette tape. She has used <math>\frac{1}{10}</math> of the tape for rock music and <math>\frac{1}{3}</math> for rap music. The amount of time left on her cassette tape is</p> <p>(A) 27 minutes    (B) 39 minutes    (C) 51 minutes    (D) 54 minutes</p>	
<p>6. Express <math>\frac{2}{5}\%</math> as a decimal</p>	
<p>7. <math>\frac{3}{5} &lt; \frac{2}{\square}</math> where <math>\square</math> is a whole number</p> <p>What is the largest possible value for <math>\square</math></p>	
<p>8. An audience was asked to choose their favourite from Classical, Rock and Jazz music. If <math>\frac{1}{4}</math> chose Classical, <math>\frac{3}{5}</math> chose Rock and the remainder chose Jazz. What <b>percentage</b> chose Jazz?</p>	
<p>9. Find 80% of \$ 225 :</p>	
<p>10. Find the value of <math>\frac{1}{3} + \frac{3}{5} - \frac{1}{4} + \frac{1}{6} + \frac{2}{5} + \frac{2}{3} + \frac{1}{4} + \frac{5}{6}</math></p>	

11. Convert 0.4 % into a fraction	
12. Convert 0.02 into a fraction in simplest form	
13. $1 - \left(\frac{3}{4}\right)^2 =$	
14. The average of one set of 3 numbers is 12 , and the average of another set of 2 numbers is 7. What is the average of the 5 numbers ? (A) 9              (B) 9.5              (C) 10              (D) 10.5	

**SECTION D - 14 marks**

**[ 1 mark each]**

1.

$$\begin{array}{r} 579 \\ 305 \\ 64 \\ 138 \\ \hline \\ \hline \end{array}$$

2.

$$\begin{array}{r} 1604 \\ 796 \\ \hline \\ \hline \end{array}$$

3.

$$\begin{array}{r} 408 \\ \times 23 \\ \hline \\ \hline \end{array}$$

4. Divide 5280 by 7 to two decimal places

5. Express  $\frac{2}{11}$  as a decimal correct to 3 places

6. Simplify  $\frac{3}{5} \times (\frac{3}{8} + \frac{2}{2}) =$

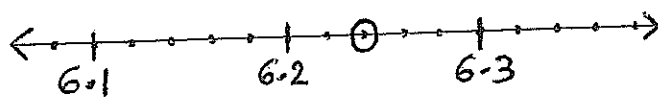
7. Write operation signs (+, -, ×, ÷) to make the sentence true  
500      50      = 40      30

8. What is the next even number in this pattern  
3, 4, 6, 9, 13, 18, 24, \_\_\_\_\_ ?

9. How many whole numbers from 10 to 99 have the sum of their digits equal to 9?

10. Which one of the signs (<, =, >) makes the sentence true  
 $5^2$        $6 \times 4$ .

11. Which number is represented by the circled point ?



Answer: \_\_\_\_\_

12.  $23.8 \times 0.12 =$  \_\_\_\_\_

13.. What fraction of \$ 2 is \$ 1.25 ? \_\_\_\_\_

14. Round off \$16.87 to the nearest 5 cents : \_\_\_\_\_



**SECTION E - 10 marks**

**(2 marks for each question)**

**Show your working for each question. Marks will be deducted for insufficient working.**

1. John has a bag of black and white marbles. 78 of them are black, and this is  $\frac{6}{13}$  of the total number of marbles. How many marbles are there altogether in the bag?

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2. A movie is said to last from 10:30 a.m. to 12:20 p.m. During the movie advertisements lasted for 11 minutes. What fraction of the session time was actually spent for the movie?

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3. I have some marbles. When I divide them into groups of 4, I have 2 marbles left over. If I divide them into groups of 9, I have 7 left over. What is the least number of marbles I can have?

4. Jason scored 86, 79 and 75 for three Maths tests. In order to raise his average mark to 82, what must Jason get in his 4<sup>th</sup> test?

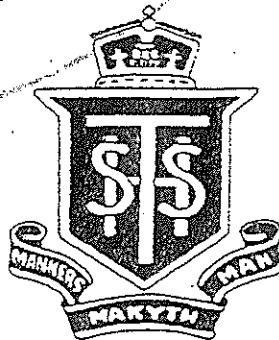
- 
5. A farmer had chickens and cows. If there are 18 heads and 52 feet on these altogether, how many chickens are there?

----- END OF TEST -----

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SYDNEY TECHNICAL HIGH SCHOOL

Solutions



YEAR 7 COMMON TEST 2009

MATHEMATICS

TIME ALLOWED : 70 Minutes

Name \_\_\_\_\_ Teacher \_\_\_\_\_

Section A	Section B	Section C	Section D	Section E	TOTAL
/ 14	/ 14	/ 14	/ 14	/ 10	/ 66

Instructions :

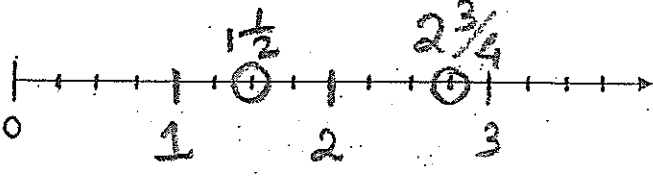
1. Attempt all questions
2. NO calculators
3. For the multiple choice questions, just write the letter of chosen answer in the space given
4. For all questions do your working in the space provided.

Do necessary working in space provided

Final answer in ANSWER column

**SECTION A - 14 Marks (1 mark each)**

**ANSWERS**

1. What is the Roman Numeral for 637 ?	DCXXXVII
2. $8 \times [7 - 3 \times (12 - 2 \times 5)] =$	8
3. $7.2 - 0.08 =$	7.12
4. Write 28.949 correct to 1 decimal place	28.9
5. $2 \frac{5}{8} - 1 \frac{1}{4} =$	$1 \frac{3}{8}$ OR 1.375
6. What is the reciprocal of $5 \frac{3}{4}$ ?	$\frac{4}{23}$
7. Arrange in ascending order: 0.503, 0.0503, 0.530, 0.5003	0.0503, 0.5003, 0.503, 0.530
8. $2 \frac{1}{4} \div 2 \frac{3}{8} =$	$\frac{18}{19}$
9. What percentage is 19 of 950 ?	2%
10. What is the average of 8.8, 9.2 and 7.8 ?	8.6
11. At roll call, there were 4 students absent and 21 students present. What percentage of the roll class was absent ?	16%
12. Graph the following set of numbers on the number line provided in answer column : $(2 \frac{3}{4}, 1 \frac{1}{2})$	

13. $4\frac{4}{5} \times 1\frac{3}{4} =$	$8\frac{2}{5}$
14. Which of the following is greater than $\frac{2}{3}$ ?  (A) $\frac{3}{5}$ (B) $\frac{5}{8}$ (C) $\frac{7}{10}$ (D) $\frac{7}{11}$	C

### SECTION B - 14 Marks

(1 mark each)

ANSWERS

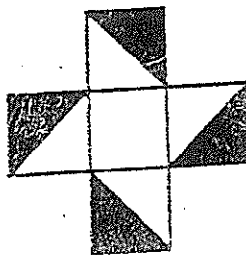
1. The place value of 6 in the number 4.267 is  (A) $\frac{6}{1000}$ (B) $\frac{6}{100}$ (C) $\frac{6}{10}$ (D) 6	B
2. If $p = \frac{1}{3}$ , $q = \frac{10}{3}$ and $r = \frac{3}{10}$ , then which of the following is true?  (A) $p > q$ and $q > r$ (B) $q > r$ and $r > p$ (C) $q > p$ and $p > r$ (D) $r > p$ and $p > q$	C
3. The fraction $\frac{9}{16}$ is equivalent to  (A) $\frac{3}{4}$ (B) $\frac{18}{48}$ (C) $1\frac{7}{9}$ (D) $\frac{45}{80}$	D
4. 24% is closest to  (A) $\frac{1}{24}$ (B) $\frac{1}{5}$ (C) $\frac{1}{4}$ (D) $\frac{1}{3}$	C
5. Which fraction is greater than $\frac{1}{2}$ ?  (A) $\frac{1}{3}$ (B) $\frac{4}{9}$ (C) $\frac{3}{7}$ (D) $\frac{3}{5}$	D

6.. Which of these is the largest ?  (A) 40 %    (B) 0.04    (C) $\frac{11}{25}$ (D) 0.404	C
7.. In a pile of 800 bricks, 20 are faulty. The percentage of faulty bricks is  (A) 0.025 %    (B) 0.4 %    (C) 2.5%    (D) 40%	C
8. I. $\frac{2}{3}$ is smaller than $\frac{3}{5}$  II. $\frac{2}{3}$ is smaller than $\frac{4}{9}$  Which of the above statements is true ? (A) I only    (B) II only    (C) Both I and II    (D) Neither I nor II	D
9. Find the difference in value between the 'threes' in 3.003	2.997
10. Which of the following is <b>not</b> equal to $\frac{2}{3}$ ?  (A) $\frac{2+2}{3+3}$ (B) $\frac{2 \times 5}{3 \times 5}$ (C) $\frac{2^2}{3^2}$ (D) $\frac{2 \div 2}{3 \div 2}$	C
11. The number 0.6 is closest to which of the following numbers ?  (A) 0.5    (B) 0.06    (C) 0.63    (D) 0.58	D
12. Round off 0.0851 to the nearest hundredth	0.09
13. What number is exactly halfway between $1\frac{1}{4}$ and $4\frac{1}{2}$ ?	$2\frac{7}{8}$

14. What fraction of this figure is shaded ?

(A)  $\frac{4}{5}$       (B)  $\frac{2}{3}$

(C)  $\frac{4}{9}$       (D)  $\frac{2}{5}$



D

SECTION C - 14 marks (1 mark each)

ANSWERS

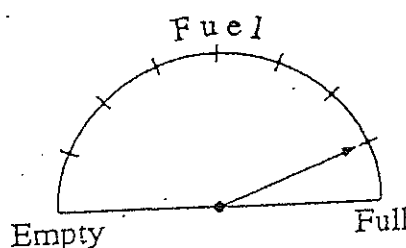
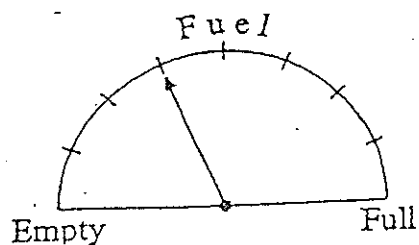
1. Convert  $14\frac{1}{2}\%$  as a simple fraction

$$\frac{29}{200}$$

2. If 10% of  $\square = 7$ , what is 15% of  $\square$  ?

$$10\frac{1}{2}$$

3. The arrows indicate the fraction of fuel in two fuel tanks



The fractions shown are

(A)  $\frac{3}{8}$  and  $\frac{7}{8}$       (B)  $\frac{3}{8}$  and  $\frac{1}{8}$       (C)  $\frac{5}{8}$  and  $\frac{7}{8}$       (D)  $\frac{5}{8}$  and  $\frac{1}{8}$

A

4.  $\frac{7}{1000} + \frac{3}{10}$  is equal to

(A) 0.703      (B) 0.073      (C) 0.037      (D) 0.307

D

<p>5. Tania is taping songs onto a 90-minute cassette tape. She has used <math>\frac{1}{10}</math> of the tape for rock music and <math>\frac{1}{3}</math> for rap music. The amount of time left on her cassette tape is</p> <p>(A) 27 minutes    (B) 39 minutes    (C) 51 minutes    (D) 54 minutes</p>	<p>C</p>
<p>6. Express <math>\frac{2}{5}\%</math> as a decimal</p>	<p>0.004</p>
<p>7. <math>\frac{3}{5} &lt; \frac{2}{\square}</math> where <math>\square</math> is a whole number</p> <p>What is the largest possible value for <math>\square</math></p>	<p>3</p>
<p>8. An audience was asked to choose their favourite from Classical, Rock and Jazz music. If <math>\frac{1}{4}</math> chose Classical, <math>\frac{3}{5}</math> chose Rock and the remainder chose Jazz. What percentage chose Jazz?</p>	<p>15%</p>
<p>9. Find 80% of \$ 225 :</p>	<p>\$180</p>
<p>10. Find the value of <math>\frac{1}{3} + \frac{3}{5} - \frac{1}{4} + \frac{1}{6} + \frac{2}{5} + \frac{2}{3} + \frac{1}{4} + \frac{5}{6}</math></p>	<p>3</p>



11. Convert 0.4 % into a fraction	$\frac{1}{250}$
12. Convert 0.02 into a fraction in simplest form	$\frac{1}{50}$
13. $1 - \left(\frac{3}{4}\right)^2 =$	$\frac{7}{16}$
14. The average of one set of 3 numbers is 12 , and the average of another set of 2 numbers is 7. What is the average of the 5 numbers ? (A) 9            (B) 9.5            (C) 10            (D) 10.5	C

# SECTION D - 14 marks

[ 1 mark each]

1.

$$\begin{array}{r} 579 \\ 305 \\ 64 \\ 138 \\ \hline \end{array}$$

$$\underline{\underline{1086}}$$

2.

$$\begin{array}{r} 1604 \\ 796 \\ \hline \end{array}$$

$$\underline{\underline{808}}$$

3.

$$\begin{array}{r} 408 \\ \times 23 \\ \hline \end{array}$$

$$\underline{\underline{9384}}$$

4. Divide 5280 by 7 to two decimal places

$$754.29$$

5. Express  $\frac{2}{11}$  as a decimal correct to 3 places

0.182

6. Simplify  $\frac{3}{5} \times (\frac{3}{8} + \frac{2}{2}) = \frac{33}{40}$

7. Write operation signs (+, -, ×, ÷) to make the sentence true

$500 \div 50 = 40 - 30$

8. What is the next even number in this pattern

3, 4, 6, 9, 13, 18, 24, \_\_\_\_\_ ? 48

9. How many whole numbers from 10 to 99 have the sum of their digits equal to 9?

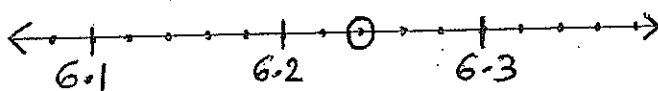
(18, 27, 36, 45, 54, 63, 72, 81, 90)

Nine

10. Which one of the signs (<, =, >) makes the sentence true

$5^2 > 6 \times 4$

11. Which number is represented by the circled point ?



Answer: 6.24

12.  $23.8 \times 0.12 = 2.856$

13. What fraction of \$2 is \$1.25 ?  $\frac{5}{8}$

14. Round off \$16.87 to the nearest 5 cents : \$16.85

SECTION E - 10 marks

(2 marks for each question)

Show your working for each question. Marks will be deducted for insufficient working.

1. John has a bag of black and white marbles. 78 of them are black, and this is  $\frac{6}{13}$  of the total number of marbles. How many marbles are there altogether in the bag?

$$\frac{6}{13} \Rightarrow 78$$

$$\frac{1}{13} \Rightarrow 13$$

$$\text{Ans} = 169$$

2. A movie is said to last from 10:30 a.m. to 12:20 p.m. During the movie advertisements lasted for 11 minutes. What fraction of the session time was actually spent for the movie?

$$\text{Total time} = 110 \text{ min}$$

$$\text{Actual movie} = 110 - 11$$

$$= 99$$

$$\text{Fraction} = \frac{99}{110} = \frac{9}{10}$$

$$\text{Ans} = \frac{9}{10}$$

3. I have some marbles. When I divide them into groups of 4, I have 2 marbles left over. If I divide them into groups of 9, I have 7 left over. What is the least number of marbles I can have?

$$34 \div 4 = 8 \text{ r } 2$$

$$34 \div 9 = 3 \text{ r } 7$$

$$\text{Ans} = 34$$

4. Jason scored 86, 79 and 75 for three Maths tests. In order to raise his average mark to 82, what must Jason get in his 4<sup>th</sup> test?

Total of 4 tests

$$= 82 \times 4$$

$$= 328$$

Total of 3 tests

$$= 240$$

Mark in 4<sup>th</sup> test

$$= 328 - 240$$

$$= 88$$

Ans = 88

5. A farmer had chickens and cows. If there are 18 heads and 52 feet on these altogether, how many chickens are there?

Chicken - 2 feet

Cow - 4 feet

$$\text{Chicken: } 10 \times 2 = 20 \text{ feet}$$

$$\text{Cow: } 8 \times 4 = 32 \text{ feet}$$

$$\underline{\quad 52 \text{ feet} \quad}$$

Ans = 10  
chickens

or

Trial  
and  
error

Chicken	Cow	Total feet

END OF TEST