

High School

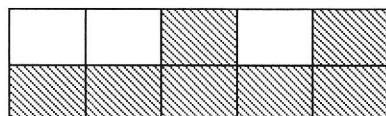
Year
7

Mathematics Test –
Decimals

Non Calculator Test

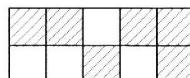
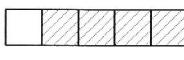
Name

1. What decimal indicates the fraction of the rectangle below which is shaded?



0 . 7 is shaded.

2. Which diagram shows 0.4 of the rectangle shaded?



3. Write the decimal 0.6 as a fraction in simplest form.

$$0.6 = \frac{\boxed{3}}{\boxed{5}}$$

4. Which fraction below is not the same as the decimal 0.28?

$$\frac{28}{100}$$

$$\frac{14}{50}$$

$$\frac{2}{8}$$

$$\frac{7}{25}$$

5. What is the value of the 2 digit in the number 35.267?

Units

Tenths

Hundredths

Thousands

6. The number 0.207 could be expressed in expanded notation as:

$2 \times 1 + 7 \times \frac{1}{10}$

$2 \times \frac{1}{10} + 7 \times \frac{1}{100}$

$2 \times \frac{1}{100} + 7 \times \frac{1}{1000}$

$2 \times \frac{1}{10} + 7 \times \frac{1}{1000}$

7. Find the value of $4.3 + 2.8$.

7. 1

8. $10.4 + 4.05 = ?$

14.45

14.9

50.9

50.45



9. Marnie took part in a diving competition. The six judges gave her scores out of 10, of 9.2, 7.7, 7.8, 9.3, 6.5 and 8.3.

What was her total score from the six judges?

48.8

10. Jacob is making cakes for a stall at the fete. He places into a bowl 0.25 kg of margarine, 1.6 kg of milk, 0.7 kg of eggs, 0.625 kg of sugar and 0.005 kg of salt. What is the total mass in kg of the contents of the bowl?

3.18 kg.

11. $8.65 - 0.4 =$

8.61

8.25

4.65

4.25



12. Annie has 24.5 metres of rope on a spool and cuts off a length of 4.25 metres, to tie up her brother. How many metres of rope are left on the spool?

20.25 metres.

13. Kerry has a 2 litre bottle of fruit juice. She pours out 0.325 litres into a glass. How many litres of juice are left in the bottle?

1 . 675 litres.

14. Which is the correct value of 0.3×0.04 ?

1.2

0.12

0.012

0.0012

15. Complete the multiplication below:

$$\begin{array}{r}
 0.35 \times \\
 7 \\
 \hline
 2.45
 \end{array}$$

16. Andrew buys 0.6 kg of potatoes at \$1.75 per kilogram. What is the cost of the potatoes?

\$ 1 . 05

17. When 4 is divided by 0.5, the result is:

8

2

0.2

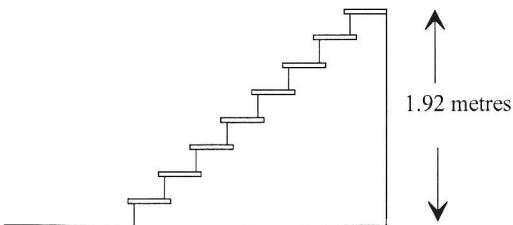
0.8

18. Complete the division below.

$$\begin{array}{r}
 0.69 \\
 6 \overline{)4.14}
 \end{array}$$

19. A set of stairs has eight steps, of equal height. The stairs have a total height of 1.92 metres. How high is each step (in metres)?

0 . 24 metres.



20. Consider the two statements below.

- A. When you multiply a number by 0.4, the result is larger than the original number.
 B. When you divide a number by 0.4, the result is larger than the original number.

Which statement is true?

- Statement A only is true. Both statements are true.
 Statement B only is true. Neither statement is true.

21. When 0.297 is rounded correct to 2 decimal places, the result is :

- 0.2 0.3 0.29 0.30

22. Round 12.378 46 correct to 3 decimal places.

12.378

23. Which fraction is the same as 0.45?

- $\frac{9}{25}$ $\frac{9}{20}$ $\frac{8}{25}$ $\frac{4}{5}$

24. Which decimal is equivalent to $\frac{3}{8}$?

- 0.375 0.38 0.125 0.275

25. Write 0.064 as a fraction in simplest form.

$$0.064 = \frac{8}{125}$$

26. Write 58.52 as a fraction in simplest form.

$$58.52 = \frac{58}{25} \frac{13}{25}$$

27. Write $\frac{19}{25}$ as a decimal number.

$$\frac{19}{25} = 0.76$$

28. Write $2\frac{17}{20}$ as a decimal number.

$$2\frac{17}{20} = 2.85$$

29. Marius finds that 0.3 of his collection of football cards are of retired players, described as “legends”. If he has 140 cards, how many cards are of legends?

42 are legends.

30. Julie has a collection of autographs of famous sportspeople. She says that 0.4 of her autographs are of netball players. If she has 34 netball autographs, how many autographs does she have altogether?

85 autographs.

31. In a dancing competition, each couple are given a score out of 10, and then their average score is found by adding their scores and dividing by the number of scores. Lydia and Kegan have the five scores below. Work out their average score.

7.5, 8.2, 9.4, 8.6, 7.3.

Average score = 8.2

32. A petrol additive at a Service Station sells for 94.4cents per litre. Marshall buys 0.6 litres of additive for his minibike. What is the cost of the additive in dollars and cents, rounded to the nearest cent?

\$ 0.57

33. Arrange the following decimals in ascending order (smallest to largest).

0.2, 0.002, 0.5, 0.25, 0.52, 0.205.

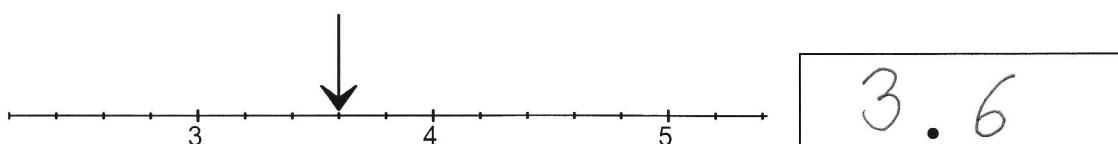
0.002 0.2 0.205 0.25 0.5 0.52

34. Arrange the following decimals in descending order (largest to smallest).

1.3, 3.001, 3.1, 1.03, 13, 1.31

13 3.1 3.001 1.31 1.3 1.03

35. What is the decimal number represented by the arrow on the number line below?



High School

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Mathematics Test – Fractions

Non Calculator Test

Name

1. Which figure below has $\frac{3}{10}$ shaded?



2. Which pair of fractions below has the same numerator but different denominators?

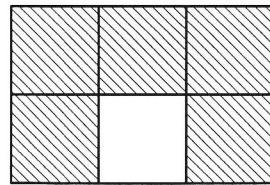
$\frac{2}{3}$ and $\frac{4}{5}$

$\frac{2}{5}$ and $\frac{4}{5}$

$\frac{2}{3}$ and $\frac{2}{5}$

$1\frac{2}{3}$ and $2\frac{4}{5}$

3. The fraction of the diagram which is shaded is :



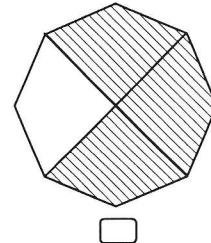
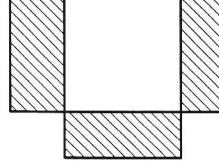
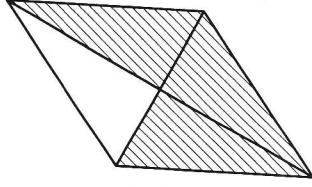
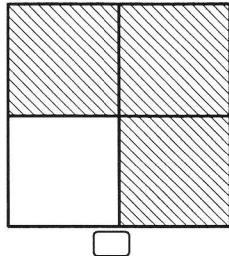
$\frac{1}{5}$

$\frac{4}{5}$

$\frac{1}{6}$

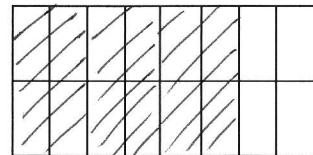
$\frac{5}{6}$

4. Which diagram does *not* show $\frac{3}{4}$ of the figure shaded?



5. Shade $\frac{3}{4}$ of the shape shown.

Any 12 shaded.



6. Which pair of numbers below are both improper fractions?

$$\frac{8}{3} \text{ and } \frac{9}{5}$$

$$\frac{2}{5} \text{ and } \frac{4}{5}$$

$$\frac{2}{3} \text{ and } \frac{9}{5}$$

$$\frac{8}{3} \text{ and } \frac{4}{5}$$

7. When written as a mixed number, $\frac{12}{5}$ is;

$$1\frac{2}{5}$$

$$2\frac{2}{5}$$

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

$$.5\frac{1}{2}$$

8. Write $3\frac{4}{5}$ as an improper fraction.

$$\frac{19}{5}$$

9. Which set of numbers is in ascending order?

$$\frac{2}{3}, \frac{1}{2}, \frac{5}{6}$$

$$\frac{2}{3}, \frac{5}{6}, \frac{1}{2}$$

$$\frac{1}{2}, \frac{2}{3}, \frac{5}{6}$$

$$\frac{5}{6}, \frac{2}{3}, \frac{1}{2}$$

10. Which statement is true?

$$\frac{1}{2} > \frac{2}{3}$$

$$\frac{2}{3} < \frac{1}{2}$$

$$\frac{1}{2} < \frac{2}{3}$$

$$\frac{1}{2} = \frac{2}{3}$$

11. Which number is largest $\frac{5}{6}, \frac{5}{8}, \frac{3}{5}$ or $\frac{3}{4}$?

$$\frac{5}{6}$$

12. The reciprocal of $2\frac{3}{4}$ is :

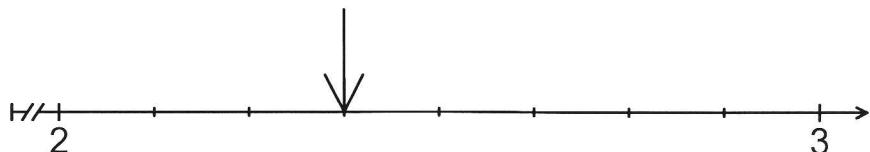
$$\frac{11}{4}$$

$$\frac{4}{11}$$

$$\frac{4}{23}$$

$$3\frac{1}{3}$$

13. What fraction is indicated by the arrow on the number line below?



$$5$$

$$2\frac{3}{5}$$

$$2\frac{3}{8}$$

$$2\frac{1}{3}$$

14. Complete the statement :

$$\frac{25}{30} = \frac{5}{6}$$

15. Simplify the fraction $\frac{32}{40}$ as completely as possible.

$$\frac{4}{5}$$

16. Which equation is correct?

$$\square \quad \frac{3}{10} + \frac{1}{5} = \frac{4}{15}$$

$$\square \quad \frac{3}{10} + \frac{1}{5} = \frac{4}{50}$$

$$\square \quad \frac{3}{10} + \frac{1}{5} = \frac{4}{10}$$

$$\square \quad \frac{3}{10} + \frac{1}{5} = \frac{1}{2}$$

17. Complete, giving your answer in simplest form;

$$\frac{3}{8} + \frac{1}{4} = \frac{5}{8}$$

18. Complete, giving your answer in simplest form;

$$\frac{1}{4} + \frac{2}{5} = \frac{13}{20}$$

19. Complete, giving your answer in simplest form;

$$\frac{7}{10} - \frac{2}{5} = \frac{3}{10}$$

20. Complete, giving your answer in simplest form;

$$\frac{2}{3} - \frac{3}{8} = \frac{7}{24}$$

21. $\frac{3}{8}$ of 400 metres is;

150 metres

50 metres

300 metres

120 metres

- 22 Nathan has 48 reading books and he gives $\frac{3}{8}$ of these books to his little sister to read.
How many books does Nathan have left after giving away his books?

books

23. $\frac{5}{6} \times \frac{2}{5} =$

 $\frac{1}{2}$

 2

 $\frac{1}{3}$

 3

24. Complete, giving your answer in simplest form;

$$\frac{3}{4} \times \frac{1}{5} = \frac{3}{\boxed{20}}$$

25. Complete, giving your answer in simplest form;

$$\frac{3}{4} \times \frac{2}{3} = \frac{1}{\boxed{2}}$$

26

$$\frac{3}{4} \div \frac{5}{8} =$$

$$\frac{3}{4} \times \frac{5}{8}$$

$$\frac{4}{3} \times \frac{5}{8}$$

$$\frac{3}{4} \times \frac{8}{5}$$

$$\frac{4}{3} \times \frac{8}{5}$$

27. Complete, giving your answer in simplest form;

$$\frac{1}{10} \div \frac{2}{3} = \frac{3}{\boxed{20}}$$

28. Complete, giving your answer in simplest form;

$$\frac{3}{4} \div \frac{7}{8} = \frac{6}{\boxed{7}}$$

29. A class has 24 students. If $\frac{3}{8}$ of the students are girls, how many boys are in the class?

15 boys

30. In a dressing room before a game $\frac{2}{5}$ of the players are forwards, $\frac{7}{20}$ are backs and the remainder are reserves.

What fraction are reserves?

$$\frac{1}{4} \text{ are reserves.}$$

31. Marjorie is making a cake. She mixes the liquid ingredients first. She pours $1\frac{1}{2}$ cups of milk, $\frac{3}{4}$ of a cup of water and $\frac{2}{3}$ of a cup of oil into a bowl.

How many cups of liquid does she have in the bowl?

$$\frac{11}{12} \text{ cups.}$$

32. Kenny has a big box of trading cards at home. One day he brought $\frac{4}{5}$ of them to school. He traded $\frac{3}{8}$ of the cards that he brought to school for an electronic game.

What fraction of his original box of cards did he trade for the game?

$$\frac{3}{10} \text{ of the cards.}$$

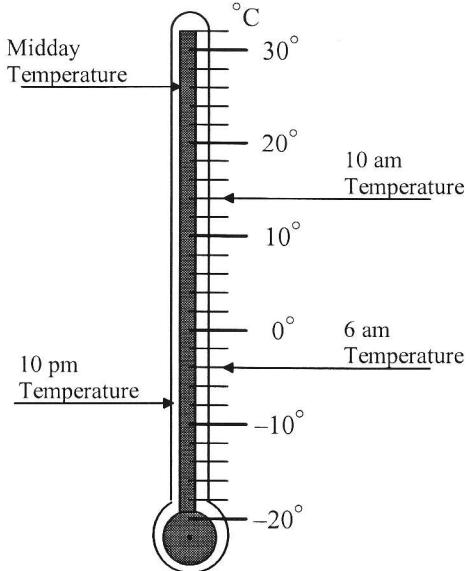
Lithgow High School

Year

Mathematics Test – Integers

Name

Questions 1 to 5 refer to the thermometer below which shows the temperatures at four times on the same day, starting at 6 am.



1. What is the 6 am temperature shown on the thermometer?

°C

2. What is the maximum temperature that can be recorded on the thermometer?

31°C

32°C



34°C

35°C

3. By how many degrees did the temperature fall between midday and 10 pm?

24°C

26°C

34°C



18°C

4. By how many degrees did the temperature rise between 6 am and 10 am?

9°C

10°C

16°C

18°C



5. The temperature was 28°C at 2pm and fell by 5 degrees per hour till 9pm.

The temperature at 9 pm was °C.

Questions 6 – 8 refer to the information below about the card game called Five Hundred.

In the card game Five Hundred, players start with 0 points and gain points when they win hands and lose points when they lose hands. A player wins when their total score gets above 500 points or loses when it falls below -500 points.

6. Michael is on a score of 200 points and loses a hand worth 140 points. What is his new score?

60

7. Susan is on -260 points and wins a hand worth 400 points. What is her new score?

140

8. Jenny is on -280 points. What score on the next hand would see her lose the game?

-220

9. $-12 + -8 =$

-4

4

20

-20

10. $-12 + 20 =$

8

11. $-6 \times 9 =$

54

-54

48

-48

12. $-8 \times -5 =$

40

13. $-11 - (-8) =$

-19

-19

-3

3

14. $23 - (-15) =$

38

15. $-60 \div -5 =$

12

15

-12

-15

16. $\frac{-72}{8} =$

-9

17. $-10 - 6 - (-8) =$

-12

-24

-8

24

18. $(-6)^2 \div -4 =$

-9

19. $-8 \times (-18 + 7) =$

88

200

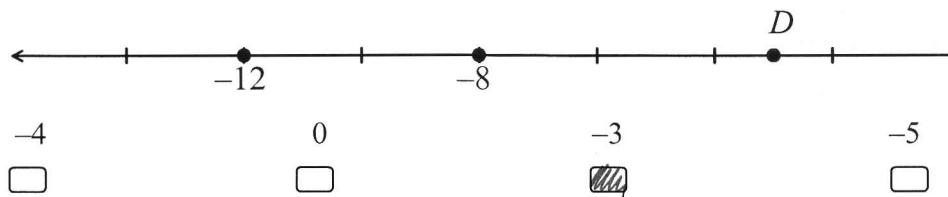
-88

-200

20. $(-15 - -8)^2 =$

49

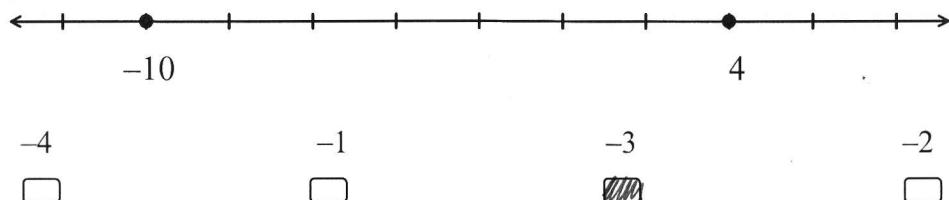
21. The numbers -12 and -8 are marked on the number line below. What is the third number (labelled D) which is marked on the number line?



22. Mark the answer to $-4 + (-2)$ on the number line below.



23. What number is halfway between -10 and 4 on the number line?



24. Re-write the numbers -12 , 8 , -2 , 0 and -8 in descending order.

8	0	-2	-8	-12
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25. Use one of the symbols $>$ or $<$ in each of the statements below to make both statements true.

Statement 1 -15 \square -12

Statement 2 8 \square -12

26. Write the next two numbers in the number pattern.

$-21, -15, -9, \boxed{-3}, \boxed{3}$

27. The minimum temperatures on four consecutive days were 4, -6, 0 and -2. What was the average minimum temperature for the 4 days?

-1°C

28. Five friends have bank accounts. Some of the friends have an overdraft which means they owe the bank money and these appear as a negative balance. Their balances are shown in the table below.

Name	Balance
Lauren	\$1 200
Justin	\$1 000
Evan	\$800
Vera	-\$600
Steph	-\$1 600

What is the difference (in dollar terms) between the highest and lowest balances?

\$ $2\ 800$

29. Two numbers which have a sum of -5 and a product of -24 are:

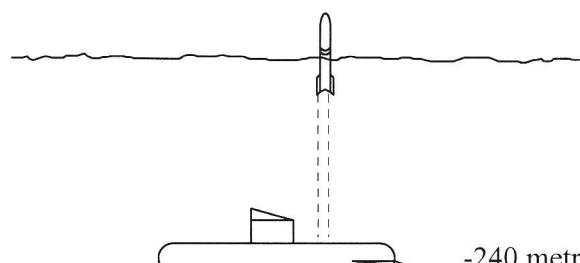
8 and -3

3 and -8

4 and -6

3 and 8

30. A submarine which is 240 metres below the surface of the ocean fires a missile directly upward. The missile climbs 660 metres from the submarine before hitting a test target. How far above the ocean surface was the target?



420 metres

High School

Year 7 Mathematics Test – Indices and Number Systems

Non Calculator Test

Name

1. What is the place value of the 5 digit in the number 15 234?

five hundred

five thousand

fifty

fifty thousand

2. Rewrite the list of numbers in the boxes provided, in ascending order.

1 023, 231, 2 301, 132, 1 230

 132 231 10 23 12 30 2301

3. Write the numeral for the number:

“Two hundred and thirty five thousand, eight hundred and sixteen”

 235 816

4. Write the single numeral for the number which is written in expanded notation as:

$$2 \times 10\,000 + 7 \times 1\,000 + 3 \times 10$$

 27 030

5. The crowd at two football matches were counted to be 78 823 and 4 980. The newspaper rounded them to the nearest hundred. What did the newspaper report the crowds to be?

78 800 and 4 900 78 800 and 5 000 78 900 and 4 900 78 900 and 5 000

6. A newspaper article describes a company's annual profit as being \$560K. This amount is the same as:

\$560 000

\$56 000

\$5 600

\$560

7. Complete the sentence by using a number between 0 and 10:

A prime number has exactly 2 factors.

8. Which pair of numbers below has one prime number and one composite number?

2 and 3

8 and 9

1 and 2

3 and 4

9. The number 30 can be written as a product of its prime factors as:

3×10

$2 \times 3 \times 5$

$1 \times 5 \times 6$

$1 \times 2 \times 15$

10. Complete the boxes to write the product below in index notation.

$$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 = 2^{\boxed{4}} \times 3^{\boxed{3}}$$

11. $13^2 = 169$ and $5^3 = 125$.

Which is correct?

$$\boxed{} \quad \sqrt{169} = 13 \text{ and } \sqrt{125} = 5 \quad \boxed{} \quad \sqrt[3]{169} = 13 \text{ and } \sqrt[3]{125} = 5$$

$$\boxed{} \quad \sqrt{169} = 13 \text{ and } \sqrt[3]{125} = 5 \quad \boxed{} \quad \sqrt[3]{169} = 13 \text{ and } \sqrt{125} = 5$$

12. Which of the following is **not** true?

$$4 \times 8 = 8 \times 4$$

$$4 + 8 = 8 + 4$$

$$8 \div 4 = 4 \div 8$$

$$4 + 0 = 4$$

13. Complete the following giving the final value of the calculation:

$$3^2 \times 2^3 \times 5 = \boxed{360}$$

14. Complete the boxes to write the number below in expanded notation using indices.

$$20\ 304 = 2 \times 10^{\boxed{4}} + 3 \times 10^{\boxed{2}} + 4 \times 10^{\boxed{0}}$$

15. Which of the following is correct?

- 20 is a factor of 5 and a multiple of 100
 20 is a multiple of 5 and a multiple of 100
 20 is a factor of 5 and a factor of 100
 20 is a multiple of 5 and a factor of 100

16. Write all of the factors of 24.

1 2 3 4 6 8 12 24

17. Write the first 5 multiples of 12.

12 24 36 48 60

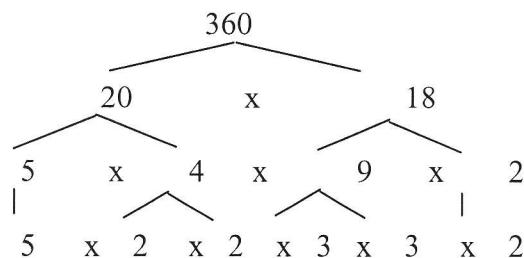
18. Two prime numbers that differ by two are called twin primes. For example, 3 and 5 are twin primes, but 7 and 11 are not because they differ by four.

Write down another pair of twin primes.

5 and 7

Others 11 & 13 29 & 31
17 & 19 41 & 43 etc

- 19.



Using the factor tree above complete the prime factorisation of 360 below.

$$360 = 2^{\boxed{3}} \times 3^{\boxed{2}} \times 5^{\boxed{1}}$$

20. Which is true?

- 315 is divisible by 3 and by 5.
 315 is divisible by 3 but not by 5.
 315 is divisible by 5 but not by 3.
 315 is not divisible by 3 nor by 5.

21. Complete the following using the words **odd** and/or **even**.

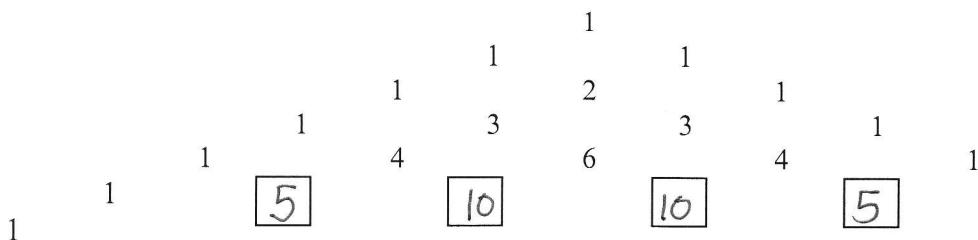
The sum of two even numbers is always even
 and the sum of two odd numbers is always even.

22. Complete line 7 of the pattern below.

$$\begin{array}{ll} \text{Line 1} & 1^2 = 1 \\ \text{Line 2} & 2^2 = 1 + 3 \\ \text{Line 3} & 3^2 = 1 + 3 + 5 \\ \text{Line 4} & 4^2 = 1 + 3 + 5 + 7 \\ \dots & \dots \\ \text{Line 7} & 7^2 = 1 + 3 + 5 + 7 + \end{array}$$

9 + 11 + 13

23. Complete the missing numbers in Pascals Triangle below.



24. The number represented by the Roman numerals below is :

MMMXXII

3112

3902

3092

3042

25. Write 267 using Roman numerals.

CCCLXVII

26. Write one of the symbols $>$, $<$ or $=$ in the box to correctly complete the sentence below.

$$23 \times 4 \quad \boxed{>} \quad 82$$

27. Which of the following statements is true?

Statement A

$$17 + 30 \neq 47$$

- Statement A only is true.
 Statement B only is true.
 Both statements are true.
 Neither statement is true.

Statement B

$$40 - 23 \geq 10$$

28. $30 \div 3 \times 5 \times 2 =$

100

4

1

30

29. Complete the calculation below using the correct order of operations.

$$2 \times (17 - 11)^2 = \boxed{72}$$

30. Use lines to join the pairs of expressions which are equal in value.

$$\frac{3 + 11}{7}$$

$$2 + 6 \times 3$$

$$18 - 4^2$$

$$9 \times 3 - 14 \div 2$$

High School

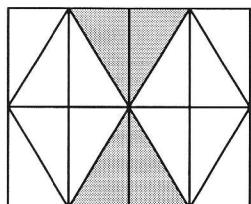
Year
7

Mathematics Test – Percentages

Non Calculator Test

Name

1. What percentage of the rectangle is shaded?



25

% is shaded.

2. A floor consists of red and white tiles. If 40% of the tiles are red, what percentage of the tiles are white?

60

% of the tiles are white.

3. 34% of the residents of a town are under 20 years of age. What percentage of residents are 20 years of age, or older?

34%

66%

76%

56%

4. Jason, Kevin and Laith are the Year 7 candidates for School Council. Laith got 34% of the votes and Kevin got twice as many votes as Jason. What percentage of the votes did Kevin get?

Kevin got

44

% of the votes.

5. The decimal 0.6 when written as a percentage is:

0.6%

0.06%

6%

60%

6. What simple fraction is equal to 45%?

9

20

7. The fraction $\frac{4}{5}$ is the same as:

45%

20%

40%

80%

8. Write 78% as a decimal.

0.78

9. Which of the following is not the same as 84% ?

 $\frac{84}{100}$

0.084

 $\frac{21}{25}$ $\frac{42}{50}$

10. Write $\frac{17}{25}$ as a percentage.

68 %

11. Write 64% as a fraction in simplest form?

16

25

12. The decimal 0.065 is the same as:

6.5%

0.65%

65%

650%

13. Which of the following is not the same as 12.5% ?

 $\frac{125}{100}$

0.125

 $\frac{1}{8}$ $\frac{125}{1000}$

14. Write $\frac{5}{6}$ as a percentage.

83 $\frac{1}{3}$ %

15. The $66\frac{2}{3}\%$ is the same as:

$\frac{1}{3}$

$\frac{33}{50}$

$\frac{2}{3}$

$\frac{3}{5}$

16. Write $\frac{7}{24}$ as a percentage.

29.2

$29\frac{1}{6}\%$

17. Find 32% of \$600.

\$ 192

18. Harry owns 140 marbles and 40% of his marbles are blue. How many blue marbles does Harry own?

14 marbles

28 marbles

56 marbles

40 marbles

19. In the town of Mayfield, 55% of voters voted for Mr King as mayor. If there are 240 voters in Mayfield, how many votes did Mr King receive?

144 votes

132 votes

121 votes

110 votes

20. Suzie banks 14% of her wage as savings. If her wage is \$650, how much does she bank?

\$ 91

21. What percentage is 16 of 40?

40 %

22. Janie scores 72 bullseyes out of 90 shots at a target in archery. What percentage of the shots were bullseyes?



80%



8%



64%



72%



23. Phil's family are collecting money for a Charity fundraiser. Phil collects \$48 and his family's total is \$80. What percentage of the family's funds did Phil collect?

60

 %

24. Which list below is in ascending order?

 0.6 , 55% , 0.5 , 45%

 0.5 , 0.6 , 45% , 55%

 45% , 55% , 0.5 , 0.6

 45% , 0.5 , 55% , 0.6

25. Which list below is in descending order?

 $\frac{3}{5}$, 52% , $\frac{1}{2}$, 33%

 52% , 33% , $\frac{3}{5}$, $\frac{1}{2}$
 33% , 52% , $\frac{1}{2}$, $\frac{3}{5}$
 33% , $\frac{1}{2}$, 52% , $\frac{3}{5}$

26. Increase 64 by 25%

80

27. When \$520 is decreased by 15%, the result is:

\$78



\$598



\$442



\$390



28. Anthea increases her gardens area from 30 m^2 to 90 m^2 . This is a percentage increase of:

35%



50%



100%



200%



29. Hannah buys an iPod for \$160 and sells it six weeks later at a loss of 30%. At what price does she sell the iPod?

\$ 112

30. Darren buys a car at auction for \$12 000 and sells it later for \$16 800. His percentage profit on his cost price was:

40%



48%



72%



29%



31. Nigella was paid \$840 per week, until last week when she received an 8% pay rise. What is her new weekly pay?

\$ 907.20

32. A store offers four different percentage discounts at its summer sale. Louise buys a dress that was originally priced at \$80.00 at a discount price of \$68.00. Which is the percentage discount that she received?

12%



15%



17%



85%



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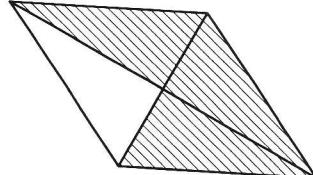
Mathematics Test –
Ratio and Rates

Calculator Test

Name

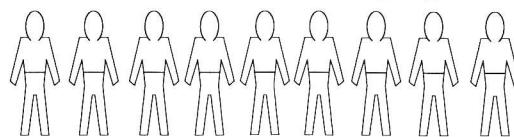
1. What is the ratio of shaded sections to unshaded sections in the figure shown ?

$$\boxed{3} \cdot \boxed{1}$$

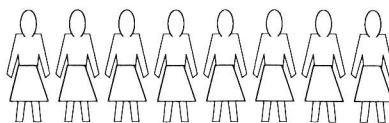


Questions 2 -4 refer to the diagram of a group of people on a bus trip.

MEN



WOMEN



2. The ratio of men to women is :

8 : 9

8 : 17

9 : 8

9 : 17

3. What is the ratio of men to the whole group?

$$\boxed{9} \cdot \boxed{17}$$

4. If three more women joined the group, what is the new ratio of women to men?

$$\boxed{11} \cdot \boxed{9}$$

5. Kayla has a collection of 60 movies which are in three categories, horror, comedy and romance. If she has 25 horror movies and 18 comedy movies, then the ratio of Horror movies : Comedy movies : Romance movies is;

25 : 18 : 60

25 : 18 : 17

17 : 18 : 25

25 : 17 : 18

6. Rahda finds that $\frac{3}{4}$ of her class are right handed and the remainder are left handed. The ratio of right to left handed in the class is;

3 : 1

3 : 4

4 : 3

4 : 1

Questions 7 – 9 refer to the information below on mixing paint using toners.

In mixing **one litre** of *Kahki Green* paint, the store adds the following toners.

20 mL of Cyan.

13 mL of Yellow

7 mL of Magenta

7. Complete the ratio below of the toners for *Kahki Green*.

Cyan : Magenta : Yellow

20	•	7	•	13
----	---	---	---	----

8. To mix **4 litres** of *Kahki Green*, how many mL of Yellow toner is needed?

52	mL.
----	-----

9. To mix **20 litres** of *Kahki Green* paint, how much toner in total (of all colours) would be added?

40 mL

400 mL

160 mL

800 mL

10. Which ratio is **not** equivalent to 5 : 6?

10 : 12

2 : 3

15 : 18

35 : 42

11. Complete the statement below to form two equivalent ratios.

$$4 : 9 = 12 : \boxed{27}$$

12. Which ratio is not equivalent to $5 : 4$?

$$\frac{21}{2} : 2$$

$$1\frac{1}{4} : 1$$

$$2 : \frac{4}{5}$$

$$1 : \frac{4}{5}$$

13. Write the ratio $32 : 48$ in it's simplest equivalent form.

$$\boxed{2} : \boxed{3}$$

14. The ratio $900\text{g} : 1.2\text{ kg}$ in simplest form, without using units, is;

$$900 : 1200$$

$$9 : 12$$

$$3 : 4$$

$$6 : 8$$

15. Write the ratio below in simplest form, without using units.

$35\text{ minutes} : 1\frac{3}{4}\text{ hours} =$

$$\boxed{1} : \boxed{3}$$

16. The ratio $\frac{2}{3} : \frac{3}{4}$ in simplest form, using only whole numbers, is;

$$8 : 9$$

$$2 : 3$$

$$3 : 4$$

$$1 : 2$$

17. Write the ratio below in simplest form, using only whole numbers.

$$\frac{5}{8} : \frac{3}{4} = \boxed{5} : \boxed{6}$$

18. In a car park, the ratio of sedans to other vehicles is 15 : 2. If there are 16 other vehicles in the car park, how many sedans are there?

120 sedans

19. A fruit juice concentrate suggests it be mixed with water in the ratio

Concentrate : Water = 3 : 17.

How much concentrate should be added to 680 mL of water?

120 mL.

20. The ratio of music played on an FM radio station is

Blues : Pop : R&B = 3 : 12 : 5

On a particular day, 144 Pop tracks were played. How many Blues and R&B would you expect on that day?

36 Blues tracks 60 R&B tracks

21. When \$80 is divided in the ratio 3 : 2, the larger amount is :

\$48



\$32



\$40



\$60



22. Divide \$450 between Jason and Ken in the ratio 5 : 4.

Jason : Ken
\$250 : \$200

23. Suri and Lashay divide the profit from their business between them in the ratio 7 : 5 respectively

If the profit in one week was \$1 872.00, then the amount that Suri would receive is:

\$156

\$1092

\$780

\$1365

24. To make *Pot Rite* potting mix, a landscaping company mixes compost, sand and peat in the ratio 8 : 4 : 1 by mass. How much sand would be needed to make 52 tonnes if *Pot Rite* mix?

16

tonnes of sand.

25. Heather rides her bike for fitness training. On Sunday she rode a distance of 48 km in 3 hours. What was her average speed in km/h?

16

km/h.

26. A water taxi travels 288 km during an eight hour shift. Its average speed over that shift is;



12 km/h

24 km/h

36 km/h

48 km/h

27. A car travels at an average speed of 82 km/h for a journey between two towns which are 492 km apart. How long did the trip between the towns take?

6

hours.

28. An aeroplane travels at an average speed of 250 m/s when at full speed. How many kilometres would it travel in a minute?

4 km

18 km

12.5 km

15 km.

29. To mix a herbicide, the instructions say to place the contents of a 500g packet into 4 litres of water. What is this as a rate in g/L?

250 g/L

125 g/L

500g/L

2kg/L

30. A harvester can cut 36 hectares of cane in an eight hour shift. What is this as a rate in hectares per hour?

4.5

hectares/ hour.

31. A town is growing at a steady rate of 12 residents/month. By how many residents will it's population increase in a year?

144

residents.

32. Water is dripping from a tap at a rate of 8 mL/min. About how much water will drip from the tap in 5 hours?

500 mL

2.4 L

3 litres

6 litres

33. So far this season Bella has scored at a rate of 15.5 goals/game for her netball team. If she has scored 124 goals so far, how many games has she played?

8

games.

34. A recipe for a dessert which serves 4 people calls for 1 cup of sugar. At this rate, how many cups of sugar would be needed if the recipe were made to serve 10 people?

1 1/2 cups

2 cups

2 1/2 cups

5 cups

35. Hannah types 24 pages of notes in 4 hours. At this rate, how many similar pages could she type in 9 hours?

54

pages.

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Test – Rational Numbers

Non Calculator Test.

Name

1. What is the highest common factor of 24 and 36?

12

2. The lowest common multiple of 12 and 8 is :

4

12

24

48

3. Which fraction below is not equivalent to $\frac{2}{3}$?

$\frac{6}{9}$

$\frac{8}{9}$

$\frac{4}{6}$

$\frac{10}{15}$

4. What is the lowest equivalent form of the fraction $\frac{24}{30}$?

4
5

5. $\frac{3}{8} + \frac{1}{8} = ?$

$\frac{4}{16}$

$\frac{1}{4}$

$\frac{4}{64}$

$\frac{1}{2}$

6. What is the value of $\frac{5}{12} + \frac{1}{3}$ in simplest form?

3
4

7. Complete the following

$$\frac{2}{3} - \frac{1}{4} = \frac{\boxed{}}{12} - \frac{\boxed{}}{12} = \frac{\boxed{5}}{\boxed{12}}$$

8. Write $2\frac{3}{4}$ as an improper fraction.

$$\frac{\boxed{11}}{\boxed{4}}$$

9. Which of the following is the same as $\frac{17}{5}$?

$$1\frac{2}{5}$$

$$3\frac{2}{5}$$

$$2\frac{2}{5}$$

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

10. $2\frac{3}{8} + 1\frac{1}{4} = ?$

$$3\frac{5}{8}$$

$$3\frac{1}{3}$$

$$3\frac{5}{12}$$

$$3\frac{1}{2}$$

11. $3\frac{5}{8} + 2\frac{3}{5} = ?$

$$\boxed{6} \quad \frac{\boxed{9}}{\boxed{40}}$$

12. $5 - \frac{5}{8} = ?$

$$4\frac{5}{8}$$

$$5\frac{3}{8}$$

$$4\frac{3}{8}$$

$$4\frac{1}{8}$$

13. $\frac{3}{8} \times \frac{1}{5} = ?$

$$\frac{23}{40}$$

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

$$\frac{3}{40}$$

$$\frac{8}{15}$$

14. The answer to $\frac{2}{3} \times \frac{3}{8}$ in simplest form is:

$\frac{23}{38}$

$\frac{6}{24}$

$\frac{3}{12}$

$\frac{1}{4}$

15. $1\frac{3}{4} \times 1\frac{2}{5} = ?$

$2\frac{9}{20}$

$1\frac{3}{10}$

$1\frac{9}{20}$

$1\frac{5}{9}$

16. $\frac{1}{4} \div \frac{2}{3} = ?$

$\frac{1}{6}$

$2\frac{2}{3}$

$\frac{3}{8}$

6

17. $1\frac{3}{8} \div \frac{3}{4} = ?$

$1\frac{5}{6}$

$1\frac{1}{2}$

$\frac{6}{11}$

$1\frac{5}{8}$

18. $0.45 + 1.025 = ?$

5.525

1.070

1.475

1.575

19. When 0.24 is subtracted from 0.825, the result is

0.585

20. $0.23 \times 0.2 = ?$

0.0046

4.6

0.046

0.46

21. $0.75 \div 5 = ?$

0.15

1.5

0.015

15

22. When 0.2748 is rounded to 2 decimal places, the result is:

0.2

0.27

0.28

0.275

23. The recurring decimal which follows the pattern 0.274 274 274 would be written as:

0.274

0.274

0.274

0.274

24. What simple fraction is the same as the decimal 0.8?

$\frac{4}{5}$

25. The fraction $\frac{3}{8}$ is the same as:

0.375

0.38

0.35

0.275

26. Which of the following is not the same as 48% ?

$\frac{48}{100}$

0.48

$\frac{12}{25}$

0.24

27. Write $\frac{7}{20}$ as a percentage.

35 %

28. Find 30% of 250 kg.

75 kg.

29. Imran puts 15% of his income into savings. How much does he save if his income in a week is \$140.00?

\$21.00

\$20.00

\$18.00

\$22.50

30. Suzies wage of \$450.00 is increased by 6%. What is her new wage?

\$456.00

\$474.00

\$477.00

\$480.00

31. Which is not a correct statement about the time of **45 minutes**?

It is three quarters
of an hour

It is 0.75
of an hour

It is 75%
of an hour

It is two thirds
of an hour

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

 $\frac{1}{2}, \quad 0.45, \quad 80\%, \quad \frac{2}{5}$ $\frac{2}{5}$ 0.45 $\frac{1}{2}$ 80%

,