

## **MATHEMATICS DEPARTMENT**

### Midterm Revision Packet Grade 8 - Mathematics

*Semester 1, Academic Year 2018-2019*

\_\_\_\_\_  
Name

Prepared by:

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#### **Important Note to Students:**

**Studying this revision packet is not enough to prepare you for your midterm exams. This revision packet has limited questions and exercise to answer to keep you sharp and ready for the midterm exam. Therefore, it is advised that you revise as well from your textbook. Your textbook has varied exercises you can always practice on, as well as answer keys you can use to verify your answers. Use your textbook as a great tool for learning. To add, returned quizzes, class work and topic tests that you compile in your math file will also be very beneficial to you. Go through them and learn from your mistakes. All the best and may your sheer effort spell SUCCESS!**

## A. NUMBERS

1.) Express 12 as a sum of two **prime numbers**. \_\_\_\_\_

2.) List down all the factors of 30

a.) Factors of 30 = \_\_\_\_\_

b.) Express 30 as a sum of two prime numbers. \_\_\_\_\_

c.) Express 30 as a product of prime factors. (Use Factor Tree Method)

30 \_\_\_\_\_

3.) List down all the factors of 36

a.) Factors of 36 = \_\_\_\_\_

b.) Find the value of  $b$ , if  $b \times b = 36$ . \_\_\_\_\_

c.) Express 36 as a product of prime factors. (Use Factor Tree Method)

36 = \_\_\_\_\_

4.) List the first six (6) multiples of 12 and 9.

a.) Multiples of 12 = \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_...

Multiples of 9 = \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_...

b.) What is the LCM of 12 and 9? Answer: \_\_\_\_\_

5.) Using the Factor Tree Method, prime factorize the following numbers:

a.) 56

b.) 120

c.) 555

\_\_\_\_\_

6.) Find the integer equal to:

a.)  $-4^2 =$  \_\_\_\_\_

b.)  $(-4)^2 =$  \_\_\_\_\_

c.)  $(-2)^3 =$  \_\_\_\_\_

d.)  $2^3 \times 3^2 \times 5 =$  \_\_\_\_\_

7.) Simplify.

a.)  $30 + 3 \times 2 =$  \_\_\_\_\_

c.)  $4 - 9 + 2 \times 2 =$  \_\_\_\_\_

b.)  $7 + 21 \div 3 =$  \_\_\_\_\_

d.)  $11 \times 3^2 - 32 \div 4 =$  \_\_\_\_\_



8.) Determine whether the following numbers are divisible by 2,3,4,5, 6 and 9.

Write YES in the box if the given number is divisible and NO if it's not divisible.

Given Numbers	Divisible by 2?	Divisible by 3?	Divisible by 4?	Divisible by 5?	Divisible by 6?	Divisible by 9?
<b>906</b>						
<b>612</b>						

## B. FRACTIONS

9.) Write  $\frac{17}{4}$  as a mixed number.

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

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

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

11.) Solve.

a.)  $\frac{4}{12} + \frac{5}{12} =$

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

b.)  $\frac{2}{3} + \frac{1}{4} =$

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

c.)  $3 - 1\frac{5}{6} =$

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

d.)  $\frac{5}{6} - \frac{7}{9} =$

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

e.)  $1\frac{1}{2} \times \frac{3}{4} =$

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

f.)  $1\frac{2}{3} \div \frac{3}{4} =$

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



### C. DECIMALS

12.) Write 42.759 in expanded fractional form. Answer: \_\_\_\_\_

13.) Write as a decimal number:  $20 + 300 + 7 + \frac{5}{100} + \frac{1}{10} + \frac{9}{1000}$ . Answer: \_\_\_\_\_

14.) What whole number lies exactly between 15 and 37? Answer: \_\_\_\_\_

15.) What decimal number lies is between 6.2 and 12.8? Answer: \_\_\_\_\_

16.) Solve the following and express your answer to the given significant figures.

a)  $3.98 + 43.416 =$  \_\_\_\_\_ (3sf)

b)  $9.34 + 2.4 + 5.09 =$  \_\_\_\_\_ (1sf)

c)  $25.8 - 3.784 =$  \_\_\_\_\_ (4sf)

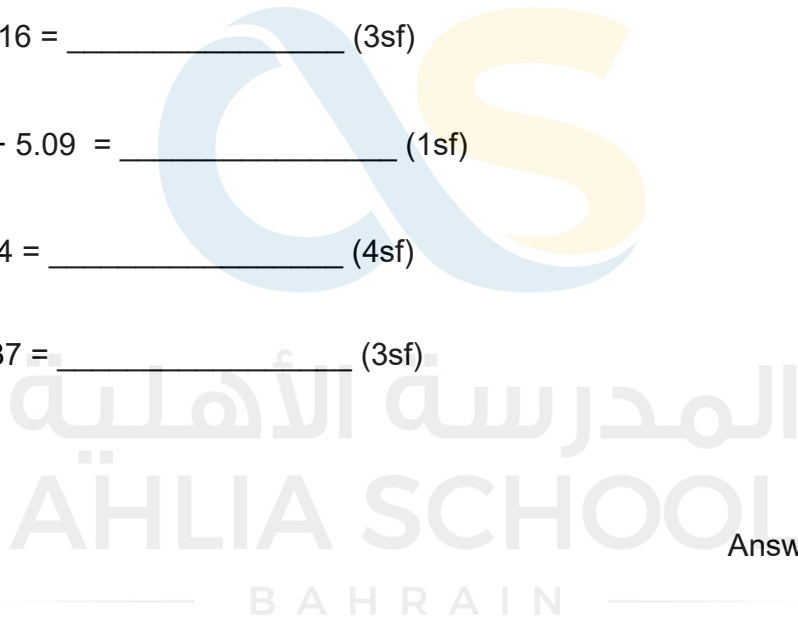
d)  $100 - 28.537 =$  \_\_\_\_\_ (3sf)

17.) Solve.

a.)  $2.3 \times 0.9$  Answer: \_\_\_\_\_

b.)  $0.05 \times 2.43$  Answer: \_\_\_\_\_

c.)  $5.63 \times 0.081$  Answer: \_\_\_\_\_



18.) Find the quotient.

a.)  $24.9 \div 3$

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

b.)  $32.145 \div 0.5$

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

c.)  $42.48 \div 1.2$

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

d.)  $62.5 \div 0.25$

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



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#### D. RATIO AND PROPORTION

19.) Express as a ratio:

a.) 5mm is to 2cm \_\_\_\_\_

d.) BD 2 is to 500fils \_\_\_\_\_

b.) 70cm is to 1.5m \_\_\_\_\_

e.) 1 day is to 8 hours \_\_\_\_\_

c.) 250g is to 1 kg \_\_\_\_\_

f.) 15 minutes is to  $1\frac{1}{2}$  hours \_\_\_\_\_

20.) Write the following ratios in simplest form.

a.)  $12 : 18$  \_\_\_\_\_

f.)  $500 : 900$  \_\_\_\_\_

b.)  $\frac{2}{3} : \frac{5}{3}$  \_\_\_\_\_

g.)  $63 : 7$  \_\_\_\_\_

c.)  $0.6 : 1.8$  \_\_\_\_\_

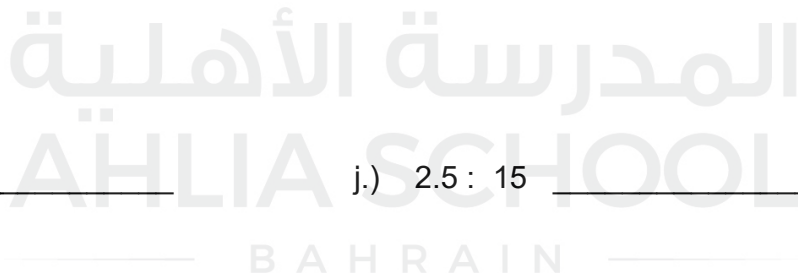
h.)  $6 : \frac{1}{2}$  \_\_\_\_\_

d.)  $35 : 15$  \_\_\_\_\_

i.)  $4\frac{1}{2} : 9$  \_\_\_\_\_

e.)  $2\frac{1}{2} : \frac{1}{2}$  \_\_\_\_\_

j.)  $2.5 : 15$  \_\_\_\_\_



21.) Find the missing number in each proportion.

a.)  $3 : 4 = 6 : \underline{\hspace{1cm}}$

f.)  $20 : \underline{\hspace{1cm}} = 4 : 3$

b.)  $5 : \underline{\hspace{1cm}} = 25 : 40$

g.)  $0.2 : 0.3 = \underline{\hspace{1cm}} : 6$

c.)  $3 : 5 = 6 : \underline{\hspace{1cm}}$

h.)  $\underline{\hspace{1cm}} : 12 = 8 : 3$

d.)  $1 : 3 = \underline{\hspace{1cm}} : 27$

i.)  $30 : 18 = 5 : \underline{\hspace{1cm}}$

e.)  $2 : \underline{\hspace{1cm}} = 6 : 9$

j.)  $2.15 = 6 : \underline{\hspace{1cm}}$

22.) Given a quantity and the ratio, use the ratio to divide the given quantity proportionately.

a.) BD 10 ..... 2 : 3

Ans. \_\_\_\_\_

b.) 28 students ..... 5 : 2

Ans. \_\_\_\_\_

c.) 150 players ..... 2 : 1

Ans. \_\_\_\_\_

d.) 35 candies ..... 3 : 4

Ans. \_\_\_\_\_

e.) 56 liters ..... 5 : 3

Ans. \_\_\_\_\_

f.) \$ 120 ..... 1 : 2 : 3

Ans. \_\_\_\_\_

g.) 24,000 kg ..... 1 : 5 : 2

Ans. \_\_\_\_\_



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23.) A group of people auditioning for a quiz show consists of men and women in the ratio 7:3.

a.) If there are 28 men auditioning, find the number of women.

Ans. \_\_\_\_\_

b.) If there are 15 women auditioning, find the number of men.

Ans. \_\_\_\_\_

24.) It takes 4 men to 6 hours to repair a road. How long will it take 8 men to do the same job?

Ans. \_\_\_\_\_



## E. SETS AND VENN DIAGRAM

25.) List all the elements of the following sets.

a.) letters which make up the word SMART       $A = \{ \underline{\hspace{10cm}} \}$

b.) months that start with letter "J"       $B = \{ \underline{\hspace{10cm}} \}$

c.) factors of 24       $C = \{ \underline{\hspace{10cm}} \}$

d.) integers between -7 and +3.       $D = \{ \underline{\hspace{10cm}} \}$

26.) Find the number of elements for each of the sets in **Question 25**.

Answer:    a.)  $n(A) = \underline{\hspace{2cm}}$     b.)  $n(B) = \underline{\hspace{2cm}}$     c.)  $n(C) = \underline{\hspace{2cm}}$     d.)  $n(D) = \underline{\hspace{2cm}}$

27.) Let  $S = \{ 1, 2, 3, 5, 7, 9, 11, 12 \}$  and  $T = \{ 2, 3, 5, 7 \}$

a.)  $S \cup T = \{ \underline{\hspace{10cm}} \}$

b.)  $S \cap T = \{ \underline{\hspace{10cm}} \}$

28.) Write all the subsets of  $U = \{ C, A, T \}$

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29.) Write the universal set for the following.

$P = \{ 4, 6, 7 \}$      $Q = \{ 1, 3, 9 \}$      $R = \{ 0, 2, 5, 10 \}$      $S = \{ 12 \}$

Answer:  $U = \{ \underline{\hspace{10cm}} \}$

30.) Give the universal set, given the following sub sets below.

A = prime numbers less than 10 \_\_\_\_\_

B = odd numbers less than 10 \_\_\_\_\_

C = multiples of 3 less than 10 \_\_\_\_\_

Answer: U = { \_\_\_\_\_ }

31.) If  $U = \{ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 \}$

$A = \{ 2, 4, 6, 8 \}$

$B = \{ 1, 2, 3, 4, 6 \}$

$C = \{ 4, 9, 10 \}$

Find:

(a)  $A'$  Answer: { \_\_\_\_\_ }

(b)  $B'$  Answer: { \_\_\_\_\_ }

(c)  $C'$  Answer: { \_\_\_\_\_ }

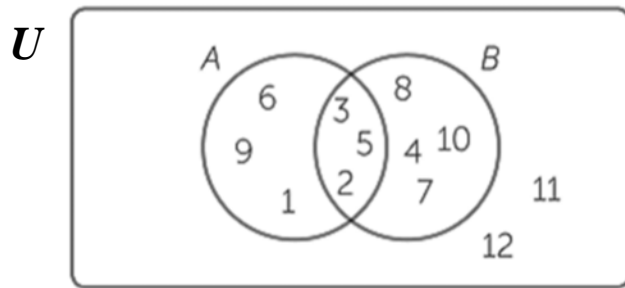
(d)  $A \cup B$  Answer: { \_\_\_\_\_ }

(e)  $A \cap C$  Answer: { \_\_\_\_\_ }

(f)  $A \cap B \cap C$  Answer: { \_\_\_\_\_ }

(g)  $(A \cup B)'$  Answer: { \_\_\_\_\_ }

32.) Answer the questions that follow using the Venn diagram below.



a.) List down all the elements of the universal set.

$U = \{ \underline{\hspace{15cm}} \}$

b.) List down the elements of set A.  $\{ \underline{\hspace{15cm}} \}$

c.) List down all elements of set B.  $\{ \underline{\hspace{15cm}} \}$

d.) Find the intersection of sets A and B.  $\{ \underline{\hspace{15cm}} \}$

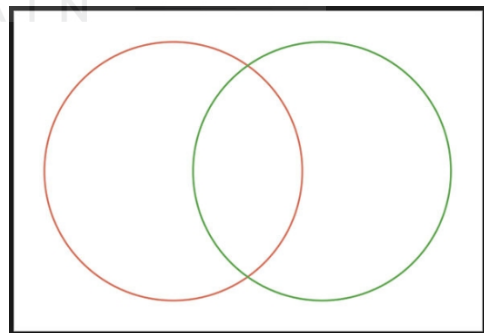
e.) Find  $A'$   $\{ \underline{\hspace{15cm}} \}$

f.) Find  $B'$   $\{ \underline{\hspace{15cm}} \}$

g.) Find  $(A \cup B)'$   $\{ \underline{\hspace{15cm}} \}$

33.) In a class of 21 students, 13 own a smartphone, 8 own a laptop and 6 own both items.

a.) Place this information on a Venn diagram.



b.) How many students in a class own a smartphone but not a laptop?  $\underline{\hspace{2cm}}$

c.) How many students own neither a smartphone nor a laptop?  $\underline{\hspace{2cm}}$

d.) How many students own a smartphone or a laptop?  $\underline{\hspace{2cm}}$

~End of Revision~