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All topics covered from September 2018 – May 2019 will be examined in the summer exam.

Topics covered:

- Natural Number (Chapter 1)
- Integers (Chapter 2)
- Sets (Chapter 6)
- Probability (Chapter 4)
- Fractions (Chapter 3)
- Decimals (Chapter 5, particularly section 5.3 and 5.4)
- Ratio (Chapter 11)
- Algebra (Chapter 8)
- Solving Equations (Chapter 14, particularly section 14.1 14.3)
- Statistics (Chapter 12)
- Presenting Data (Chapter 16)
- Percentages (Chapter 7)
- Perimeter, Area and Volume (Chapter 9)
- Geometry 1 (Chapter 10)
- Coordinates (Chapter 13, if its covered in class)

Revision should consist of the following:

- Go over the test yourself section at the end of each chapter.
- Go over your maths tests.
- Use your hardback, book and internet to help you with revision.
- Practice, practice, practice

Good websites:

www.mathsisfun.ie

www.projectmaths.ie

www.khanacademy.org

www.ixl.com

www.corbettmaths.com

Maths Grades:

Class tests = 60%

Summer Exam = 40%

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Sample questions of some topics covered in the summer exam.

Algebra Revision

Q1. Each symbol stands for a number. Write down its value:

- i. + 3 = 8
- ii. ▲ 4 = 8
- iii. **■** ÷ 4 = 10
- iv. 5 × ▲ = 20

Q2. If \blacktriangle = 5, write down the value of each of these:

- i. 6 more than ▲
- ii. 3 less than ▲
- iii. Five times ▲
- iv. Twice ▲ + ▲

Q3. Simplify each of these:

- i. 12a + b + 4a + 3b
- ii. 6ab + 2ab 3ab
- iii. 2ab c 5ab 4c

Q4. Explain the following words:

i. Unlike Terms:

ii. Coefficient:

iii. Variable:

Q5. Find the value of each expression when x = 9:

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i) x + 9ii) 2x - 2iii) $\frac{3x+3}{10}$ iv) $\frac{18}{x}$

Q6. Remove the brackets in each of these and simplify:

- i) 6(a+4) + 2(2a+3)
- ii) 4(2a-3) 2(a-5)
- iii) 3(a-2b) 4(a-2b) + 3a b

Q7. Remove the brackets and simplify each of the following:

- i) $2(x^2 + 4) + 3(x^2 + 5)$
- ii) 3x(2x-7) 3x(2x-4)

Q8. If x = 2 and y = 3, evaluate each of these:

- i) $x^2 + y^2$
- ii) $4y^2 2x^2$

Q9. Each letter stands for a number. What is the value of each number?

- i) b + 3 = 12
- ii) $h \div 3 = 6$

Order of Operations and Natural Numbers

Q1. Draw a line to match each of the following words with its definition.

1.	Factor	A.	A number with only two factors.
2.	Natural number	B.	This tells you the correct order for completing a sum.
3.	Multiple	C.	The group of positive counting numbers.
4.	Prime number	D.	A number that divides into another.
5.	BIMDAS	E.	You get one of these when you multiply two numbers.

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- **Q2.** Draw a number line that shows the first seven natural numbers.
- **Q3**. List the factors of 6.
- **Q4.** List the factors of 15.
- **Q5.** Write down the highest common factor (HCF) of 6 and 15.
- **Q6.** List the first five multiples of 4 and 5 and identify the lowest common multiple (LCM) of 4 and

5.

- **Q7.** Circle the prime numbers that are in this list:
- 1, 3, 6, 8, 9, 11, 14, 15, 17, 23
- **Q8.** List the prime factors of 42.
- **Q9.** Calculate the answers to these questions:
 - a) 5+6-2=
 - b) 7-3+10-1-4=
 - c) 25 16 ÷ 4 =
 - d) 4 × (5 + 6) =
 - e) (14 3) × 2 =

Q10. Draw a line to match each sum with the property that describes it best. There may be more than one sum matched to a property.

1.	<u>Commutative</u>	A. $5(3+2) = 5(3) + 5(2)$
2.	Associative	B. $5 \times 6 \times 3 = 6 \times 5 \times 3$
3.	<u>Distributive</u>	C. $17 + (20 + 6) = (17 + 20) + 6$
		D. $(4+2) + 7 = 4 + (2+7)$

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Q11. Calculate the answer to each of the following:

a)
$$3^2 + 4^2 =$$

b) $5(3+4) + 3(2+5) =$
c) $\frac{(50 \div 10 + 2)^2}{7} =$

d)
$$\frac{2^3 \times 3 - 20}{(4 \times 6) \div 12} =$$

Integers

Q1. Round each number to the nearest 10 and make an estimate of the answer to each of these:

(i)
$$\frac{63 \times 57}{31}$$

(ii) $\frac{204 \times 96}{53}$

Q2. Round off these numbers to the nearest 100:

i.	143	
ii.	320	
iii.	789	
iv.	67	
v.	1234	

Q3. Express each of the following as a single integer:

i. 6 − 4 =

ii. 10 – 5 =

- **iii.** 3 7 =
- **iv.** 2 − 4 − 3 =
- **v.** 6 x − 4 =

Q4. Insert the symbol > (greater than) or < (less than) between each of the pairs of numbers:

- i. 3 ____ 2
- **ii.** 5 <u>6</u>
- iii. 1___7
- iv. -1___6
- **v.** 15 ____ 10

SCO NPMD **Q5.** Simplify each of these:

- **i.** 6−8+7−9+1=
- **ii.** 6−5+3(4)−1 =
- iii. 12 7 8 + 6 =
- iv. -7 4 + 10 =

Q6. Express as a single integer:

- i. $6 \times -3 \times -2 =$
- ii. $\frac{9 \times (-6)}{-2} =$

Q7. Simplify each of the following:

- i. $3 8 + 8 \times (-2) =$
- ii. $(15-10) \times -3 + 5 \times (-6) =$

Q8. Round 23, 460

- i. to three significant figures
- ii. to one significant figure _____

Fractions

Q1. Explain and give an example of the following terms:

- a) Proper fraction: ______
- b) Improper fraction: _____
- c) Mixed number: _____
- d) Equivalent fraction: ______
- e) Denominator: ______

Q2. Rewrite each of the following and fill in the blanks to make equivalent fractions:

a) $\frac{1}{2} = \frac{1}{6}$ b) $\frac{3}{4} = \frac{1}{8}$ c) $\frac{6}{5} = \frac{1}{15}$

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d)
$$\frac{8}{7} = \frac{1}{49}$$

Q3. Rewrite each pair of fractions as fractions with the same denominator, then fill in the correct symbol < (less than) or > (greater than).

a) $\frac{2}{3} - \frac{5}{8}$ b) $\frac{3}{8} - \frac{2}{5}$

Q4. Evaluate each of the following:

a) $\frac{1}{2} + \frac{2}{5}$ b) $\frac{1}{4} + \frac{1}{3}$ c) $\frac{3}{4} - \frac{1}{2}$ d) $\frac{5}{6} - \frac{2}{3}$

Q5. Express each of the following as a single fraction in its simplest form:

- a) $\frac{1}{5} \times \frac{2}{3}$ b) $\frac{1}{4} \times 8$
- c) $3\frac{1}{4} \times \frac{1}{2}$

Q6. Evaluate each of the following:

- a) $\frac{4}{5} \div \frac{1}{7}$
- b) $1\frac{3}{4} \div \frac{7}{12}$
- c) $6 \div \frac{3}{4}$

SCO NPMD **Q7.** What is $\frac{1}{4}$ of 60?

Q8. Emma receives $\frac{4}{9}$ of a prize fund. What is the total prize fund if she received €320?

Q9. In a club, $\frac{3}{5}$ of the members are girls. The remaining 180 members are boys. How many members are there altogether?

Q10. A ball is dropped onto a hard surface. Each time it bounces, it rebounds to exactly $\frac{4}{5}$ of the height from which it fell. After the first bounce, the ball rises to a height of 60cm. From what height was it originally dropped?

Q11. Calculate
$$\frac{1}{4} + \frac{2}{9} + (\frac{5}{6})^2$$

Decimals

Complete the following questions into your copy:

Q1.

Write down the answer to each of these:					
(i)	72×10	(ii)	12 × 100	(iii)	4 × 1000
(iv)	1.6 × 10	(v)	1.34×100	(vi)	14.8 × 100

Q2.

Write down the answer to each of these:

(i)	1.2 × 4	(ii)	3.1 × 5	(iii)	8 × 0.12
	3.3 × 0.2		2.3×0.3		0.8 × 0.2

Q3.

Work out each of these:

(i)	1.2×0.4	(iii) <u>12</u>	(iii) 2.7×0.3	(iv)	0.12 × 0.4
(1)	0.3	0.6×0.5	0.9	(10)	0.8

Q4.

A car on a motorway travels 26.4 m every second. How far does it travel in each of these times? (i) 10 seconds (ii) 50 seconds (iii) 2 minutes

Q5.

Sheets of metal, 0.15 cm thick, are piled one on top of the other until they reach a height of 13.2 cm. How many sheets are there in the pile?

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Four matching pairs of divisions give the same answer. Which is the odd one out?



Q8. Round these to the nearest kilometre: (i) 135.4 km (ii) 87.47 km (iii) 135.51 km (iv) 327.89 km Q9. Express the following fractions as decimals: (iii) $\frac{3}{4}$ (i) $\frac{1}{2}$ (ii) $\frac{1}{4}$ (iv) 1/8 $(v) \frac{3}{8}$ (vii) $\frac{9}{20}$ (viii) $\frac{3}{25}$ (ix) $\frac{7}{16}$ (x) $\frac{15}{32}$ (vi) 5/8

Q10.

Wh	ich one of the	following is less the	han 0.6?			
(i)	0.6 × 2	(ii) $\frac{0.6}{0.2}$	(iii)	0.6 × 1.2	(iv)	(0.6) ²

Q11.

A group of 38 people are going to a concert. Tickets are €29.75 each.

- (i) Estimate roughly the total cost of the tickets.
- (ii) Is your rough estimate bigger or smaller than the exact amount? How can you tell without working out the exact amount?

Q12.

The numbers in the rectangles are written to two decimal places in the loops. Find five matching pairs.



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In which of the following lists are the terms **not** increasing? A: $\frac{1}{5}$, 0.25, $\frac{3}{10}$, 0.5 B: $\frac{3}{5}$, 0.7, $\frac{4}{5}$, 1.5 C: $\frac{2}{5}$, 0.5, $\frac{7}{10}$, 0.9 D: $\frac{3}{5}$, 0.5, $\frac{4}{5}$, 0.9 E: $\frac{2}{5}$, 1.5, $\frac{10}{5}$, 2.3

Percentages

1. What percentage of each of these figures is shaded?





2. Change these fractions and decimals into percentages: (i) $\frac{35}{100} =$ (iii) $\frac{1}{2} =$

(ii) 0.9 =

(iv) 0.07 =

Find the following percentage of these numbers:(i) 40% of 240

(ii)
$$20\frac{1}{2}\%$$
 of 300

4. Increase or decrease these numbers by the percentages given:(i) Increase 160 by 5%

(ii) Decrease 700 by 35%

5. Find the following numbers:(i) If 20% of a number is 16, find the number.

(ii) Ann has €12 left after spending 80% of her money. How much money did she have at first?

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- 6. Find the cost of the following items, including VAT.(i) A television that cost €220 + VAT at 20%
 - (ii) A restaurant bill that cost €120 + VAT at 21%
- 7. Find the selling price of each of the following:(i) A jumper that cost €32 and is sold at a loss of 25%
 - (ii) A book that cost ${\color{black}{\in}} 8.30$ and is sold at a profit of 15%
- 8. A student got 420 marks out of 500 in a science exam. The same student got 54 marks out of 70 in a business exam.In which exam did the student receive the higher percentage?
- 9. Find the percentage profit or percentage loss for these items:
 (i) A shop buys a radio for €20 and sells it for €28. Calculate the percentage profit.

(ii) A shop bought a coat for €92 and sold it for €80.50. Calculate the percentage loss.

10. A car is sold for €6,325, including a 15% profit. Calculate the original price of the car