



EMIRATES FALCON INT'L. PRIVATE SCHOOL



مدرسة مقر الإمارات الدولية الخاصة

MATHEMATICS

REVISION SHEET

FINAL MATH EXAM

TERM 2 (2018/2019)

GRADE 6

Chapter 4 : Lessons (4.1 - 4.2 - 4.3)

Chapter 5 : Lessons (5.1 - 5.2 - 5.3)

Chapter 7 : Lessons (7.1 - 7.2 - 7.3)

Chapter 10 : Lessons (10.1 - 10.3)

Name:

Class:

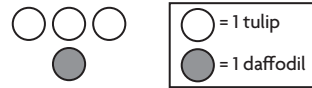


Name _____

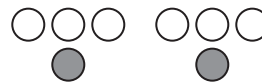
Model Ratios

Daniel is growing tulips and daffodils in a pot.
For every 3 tulips he plants, he plants 1 daffodil.
How many daffodils will he plant if he plants 12 tulips?

Step 1 Make a model and write the ratio.
The ratio of tulips to daffodils is 3:1.



Step 2 Model the number of daffodils Daniel will plant if he plants 6 tulips.



Step 3 Use the model and ratio to make a table. The table shows that for every 3 tulips, there is 1 daffodil.

Tulips	3	6	9	12
Daffodils	1	2	3	4

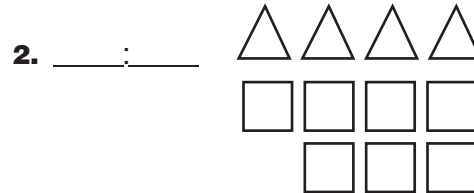
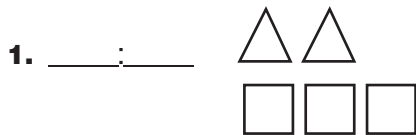
Step 4 Find 12 tulips on the table. The number of daffodils is 4.

Step 5 Write the new ratio.

The new ratio is 12:4.

So, if Daniel plants 12 tulips, he will plant 4 daffodils.

Write the ratio of triangles to squares.



Draw a model of the ratio.

3. 5:1

4. 3:4

Complete the table.

5. 1 table for every 5 students

Students	5		15	
Tables	1	2		4

6. 7 pencils for every 1 student

Students	1	2	3	
Pencils	7			28

Name _____

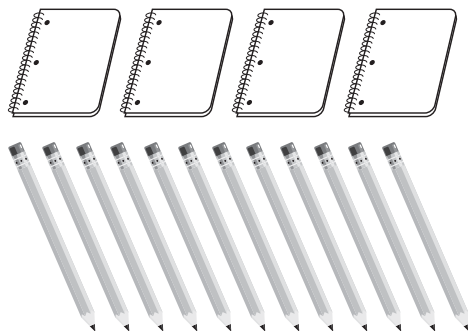
Ratios and Rates

A **ratio** is a comparison of two numbers by division.

Ratios can compare parts of a whole or compare one part to the whole.

A **rate** is a ratio that compares two numbers that have different units.

The picture shows a group of school supplies. One part is pencils. The other part is notebooks. Write the ratio of pencils to notebooks. Write the ratio using words, as a fraction, and with a colon.



Write the number of pencils first, and then write the number of notebooks.

12 to 4		$\frac{12}{4}$		12:4
number of pencils	to	number of notebooks	$\frac{\text{number of pencils}}{\text{number of notebooks}}$	number of pencils : number of notebooks

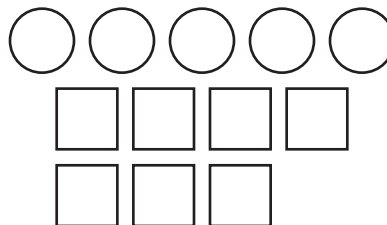
You could also write a ratio comparing part to whole. Write the ratio of notebooks to school supplies, three ways.

4 to 16		$\frac{4}{16}$		4:16
number of notebooks	to	number of school supplies	$\frac{\text{number of notebooks}}{\text{number of school supplies}}$	number of notebooks : number of school supplies

Write each ratio three ways.

1. Write the ratio of circles to squares.

_____	to	_____		_____	:	_____



2. Write the ratio of squares to shapes.

_____	to	_____		_____	:	_____

Name _____

Equivalent Ratios and Multiplication Tables

To find equivalent ratios, you can use a multiplication table or multiply by a form of 1.

Write two ratios equivalent to 10:14. Use a multiplication table.

Step 1 Find 10 and 14 in the same row.

Step 2 Look at the columns for 10 and 14.

Choose a number from each column. Make sure that the numbers you choose are in the same row.

5 and 7 30 and 42

Step 3 Write the new ratios. 5:7 30:42

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

Use multiplication or division.

Step 1 To multiply or divide by a form of 1, multiply or divide the numerator and denominator by the same number.

Multiply

Divide

$$\frac{10 \times 3}{14 \times 3} = \frac{30}{42} \qquad \frac{10 \div 2}{14 \div 2} = \frac{5}{7}$$

Step 2 Write the new ratios.

$$\frac{30}{42}$$

$$\frac{5}{7}$$

Solve.

1. Write a ratio that is equivalent to 6:16.

a. Find 6 and 16 in the same row.

b. Choose a pair of numbers from a different row, in the same columns as 6 and 16.

_____ and _____

c. Write the equivalent ratio.

6:16 = _____:

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

2. Write two ratios equivalent to $\frac{5}{9}$.

3. Write two ratios equivalent to $\frac{8}{6}$.

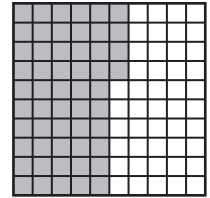
Name _____

Model Percents

A **percent** is a ratio that compares a number to 100. It represents part of a whole.

Model 54% on the 10-by-10 grid. Then write the percent as a ratio.

Step 1 The grid represents 1 whole. It has 100 equal parts. To show 54%, shade 54 of the 100 equal parts.



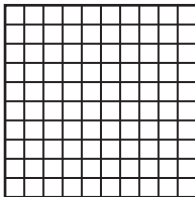
Step 2 A ratio can be written as a fraction. Write the number of shaded parts, 54, in the numerator. Write the total number of parts in the whole, 100, in the denominator.

shaded \longrightarrow 54
total \longrightarrow 100

So, 54% is 54 out of 100 squares shaded, or $\frac{54}{100}$.

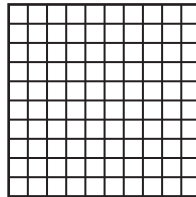
Model the percent and write it as a ratio.

1. 19%



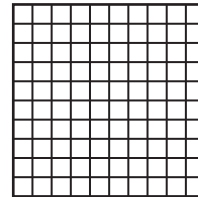
ratio: _____

2. 80%



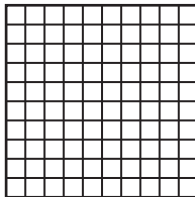
ratio: _____

3. 66%



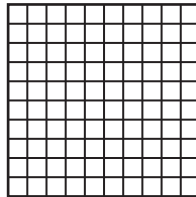
ratio: _____

4. 3%



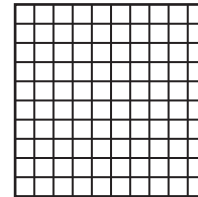
ratio: _____

5. 31%



ratio: _____

6. 25%



ratio: _____

Name _____

Write Percents as Fractions and Decimals

You can write a percent as a decimal and a fraction.

Write 140% as a decimal and as a fraction in simplest form.

Step 1 Write 140% as a decimal by changing the percent sign to a decimal point and moving it two places to the left.

$$140\% = \frac{140}{100} = 1.40$$

Step 2 Write 140% as a fraction by removing the percent sign and placing 140 in the numerator. Since percent means out of 100, place 100 in the denominator.

$$140\% = \frac{140}{100}$$

Step 3 Simplify.

$$\frac{140}{100} = \frac{7}{5}, \text{ or } 1\frac{2}{5}$$

So, $140\% = 1.40 = \frac{7}{5}$, or $1\frac{2}{5}$.

Write the percent as a decimal and as a fraction in simplest form.

1. 75%

2. 44%

3. 128%

4. 5%

5. 464%

6. 38%

7. 7%

8. 0.6%

9. 234%

10. 0.9%

11. 72%

12. 8%

Name _____

Write Fractions and Decimals as Percents

You can write fractions and decimals as percents.

To write a decimal as a percent, multiply the decimal by 100 and write the percent symbol.

$0.\underline{07}3 = 7.3\%$ ← To multiply by 100, move the decimal point two places to the right.

To write a fraction as a percent, divide the numerator by the denominator. Then write the decimal as a percent.

To write $\frac{3}{8}$ as a percent, first divide 3 by 8.

$$\begin{array}{r} 0.375 \\ 8 \overline{)3.000} \\ \underline{-24} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

So, $\frac{3}{8} = 0.375$.

$0.\underline{37}5 = 37.5\%$ ← To write 0.375 as a percent, multiply by 100 and write the percent symbol.

Write the decimal or fraction as a percent.

1. 0.45

2. 0.6

3. 2.34

4. $\frac{7}{8}$

5. $\frac{19}{50}$

6. 0.03

7. $1\frac{11}{16}$

8. $\frac{51}{10}$

Name _____

Exponents

An **exponent** tells how many times a number is used as a factor.

The **base** is the number being multiplied repeatedly.

For example, in 2^5 , 5 is the exponent and 2 is the base.

$$2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$$

Write the expression 4^5 using equal factors. Then find the value.

Step 1 Identify the base.

The base is 4.

Step 2 Identify the exponent.

The exponent is 5.

Step 3 Write the base as many times as the exponent tells you. Place a multiplication symbol between the bases.

$$4 \times 4 \times 4 \times 4 \times 4$$

You should have one less multiplication symbol than the value of the exponent.

Step 4 Multiply.

$$4 \times 4 \times 4 \times 4 \times 4 = 1,024$$

So, $4^5 = 1,024$.

Write as an expression using equal factors. Then find the value.

1. 3^4

2. 2^6

3. 4^3

4. 5^3

5. 10^4

6. 8^5

7. 11^4

8. 15^2

9. 10^7

10. 25^4

Name _____

Evaluate Expressions Involving Exponents

A **numerical expression** is a mathematical phrase that uses only numbers and operation signs.

You **evaluate** the expression when you perform all the computations.

To evaluate an expression, use the **order of operations**.

Order of Operations
1. Parentheses
2. Exponents
3. Multiply and Divide
4. Add and Subtract

Evaluate the expression $(10 + 6^2) - 4 \times 10$.

Step 1 Start with the *parentheses*.
Use the order of operations for the computations inside the parentheses.

$10 + 6^2$
Find the value of the number with an *exponent*. Rewrite as multiplication:
 $10 + 6^2 = 10 + 6 \times 6$
Multiply and divide from left to right:
 $10 + 6 \times 6 = 10 + 36$
Add and subtract from left to right:
 $10 + 36 = 46$

Step 2 Rewrite the original expression, using the value from Step 1 for the part in parentheses.

$$(10 + 6^2) - 4 \times 10 = 46 - 4 \times 10$$

Step 3 Now that the parentheses are cleared, look for *exponents*.

There are no more *exponents*, so go on to the next step in the order of operations.

Step 4 *Multiply and divide* from left to right.

$$46 - 4 \times 10 = 46 - 40$$

Step 5 *Add and subtract* from left to right.

$$46 - 40 = 6$$

So, $(10 + 6^2) - 4 \times 10 = 6$.

Evaluate the expression.

1. $8^2 - (7^2 + 1)$

2. $5 - 2^2 + 12 \div 4$

3. $8 \times (16 - 2^4)$

4. $3^2 \times (28 - 20 \div 2)$

5. $(30 - 15 \div 3) \div 5^2$

6. $(6^2 - 3^2) - 9 \div 3$

Name _____

Write Algebraic Expressions

Word problems use expressions that you can write with symbols. An **algebraic expression** has at least one variable. A **variable** is a letter or symbol that represents one or more numbers. Writing algebraic expressions for words helps you solve word problems.

These are a few common words that are used for operations.

add (+)

sum
increased by
plus
more than

subtract (-)

difference
minus
decreased by
less
less than

multiply (×)

product
times

divide (÷)

quotient
divided by

17 more than x

$$x + 17$$

“More than” means add.

“17 more than x ” means add 17 to x .

four times the sum of 7 and n

$$4 \times (7 + n)$$

“Times” means multiply.

“Sum” means add.

The words mean multiply 4 by $(7 + n)$.

A number next to a variable always shows multiplication.

For example, $5n$ means the same as $5 \times n$.

Write an algebraic expression for the word expression.

1. b divided by 9

2. c more than 5

3. d decreased by 29

4. 8 times g

5. p increased by 12

6. the quotient of k and 14

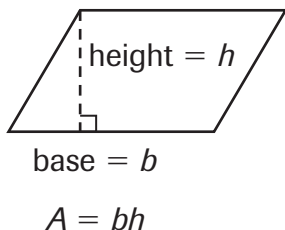
7. 17 less than the product of 3 and m

8. 2 less than the quotient of d and 16

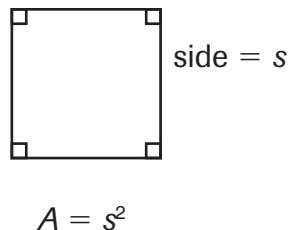
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Algebra • Area of Parallelograms

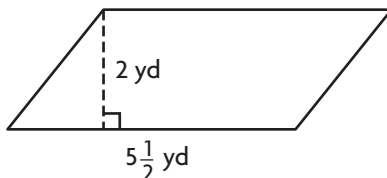
The formula for the area of a parallelogram is the product of the base and height.



The formula for the area of a square is the square of one of its sides.



Find the area.



Step 1 Identify the figure.

The figure is a parallelogram, so use the formula $A = bh$.

Step 2 Substitute $5\frac{1}{2}$ for b and 2 for h .

$$A = 5\frac{1}{2} \times 2$$

Step 3 Multiply.

$$A = 5\frac{1}{2} \times 2 = \frac{11}{2} \times \frac{2}{1} = 11$$

So, the area of the parallelogram is 11 yd^2 .

Find the area.

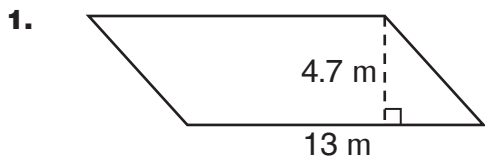
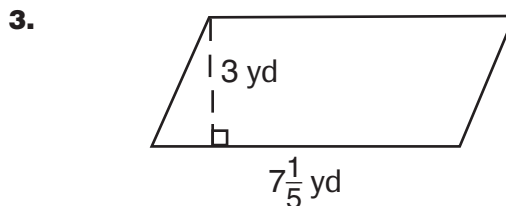
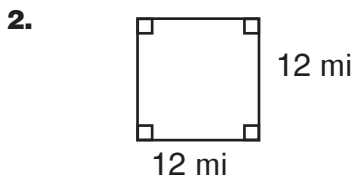


Figure: _____

Formula: $A = \underline{\hspace{2cm}}$

$$A = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ m}^2$$



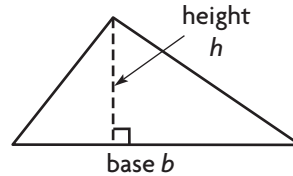
_____ mi^2

_____ yd^2

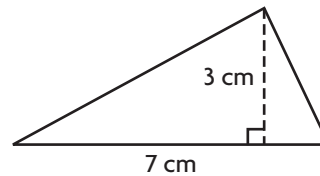
Name _____

Algebra • Area of Triangles

To find the area of a triangle, use the formula
 $A = \frac{1}{2} \times \text{base} \times \text{height}$.



Find the area of the triangle.



Step 1 Write the formula.

$$A = \frac{1}{2} bh$$

Step 2 Rewrite the formula.
 Substitute the base and height
 measurements for b and h .

$$A = \frac{1}{2} \times 7 \times 3$$

Step 3 Simplify by multiplying.

$$A = \frac{1}{2} \times 21$$

$$A = 10.5$$

Step 4 Use the appropriate units.

$$A = 10.5 \text{ cm}^2$$

Find the area of the triangle.

1.



Write the formula.

$$A = \frac{1}{2} \times \underline{\hspace{2cm}}$$

Substitute for b and h .

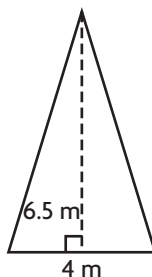
$$A = \frac{1}{2} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

Simplify.

$$A = \frac{1}{2} \times \underline{\hspace{2cm}}$$

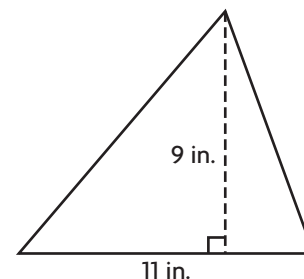
$$A = \underline{\hspace{2cm}} \text{ ft}^2$$

2.



$$A = \underline{\hspace{2cm}}$$

3.



$$A = \underline{\hspace{2cm}}$$