

Journals Grill

Name: _____

How Journals will be marked:

NAME:	Unit :	Question chosen:	Questions to finish/see notes
Neat? Creative?	Definitions and/or diagrams?		
Colourful subheadings?	Example? Can use HW question		
Numbered? Few pages only?	Explanation?		
	Correct?		
	Answered one ★ question?		

What I will look for in a Journal

- use your own (not copied from notes or internet) examples and concise (not long – but with enough detail) explanations. Ask yourself: “Will someone who wasn’t in class be able to read your journal and understand the topic studied?” Can use point form.
- incorporate an answer to at least one of the following questions. Use a star ★ to help me find you did so.
 - Problem Solving**
 - What were the advantages and disadvantages of the problem solving strategies you tried?
 - What factors make this a difficult problem?
 - Reasoning and Proving**
 - How can we verify this answer?
 - Why does this work?
 - What other situations need to be considered?
 - Reflecting**
 - How does this problem remind you of a problem you have solved before?
 - Does this problem/answer make sense to you?
 - How can this topic be used in real life? What career would use these type of skills and why?
 - Connecting**
 - Is an exact answer necessary for this question? Would estimation be adequate? OR Why was a calculator necessary (or helpful) for this problem? Explain.
 - Think of a different way to do the calculation that may be more efficient.
 - Representing**
 - How do these different representations connect to one another?
 - When could this mathematical concept or procedure be used in daily life?
 - Communicating**
 - How could you represent this idea algebraically? OR graphically? OR What properties would you have to use to construct a dynamic representation of this situation? OR In what way would a scale model help you solve this problem?
 - What would different representations of this problem demonstrate?
- be creative, use different colours, number each question, create a design/cartoon theme
- do not take up too much space, you are only given one booklet! Write small, think of this as your ‘cheatsheet’.

Each Journal will be due the DAY BEFORE the TEST. After that, every day you’ll lose 5% per day, and get a zero once the journals are returned.

Remember it is in your best interest to do ALL the Journal questions well because

- you don’t know which question will be chosen or if ALL of it will be looked at
- it will be marked as Communication Part of the TEST – which is 10% of your final mark
- it helps you study
- you can keep it for future math courses as a reference
- at the end of the course the journal can be used on the culminating activity, but NOT on the exam.

EXEMPLAR online. www.mrsk.ca

UNIT 0

REVIEW gr9-10 - journal

→ already done ☺

just print + read + insert
into your journal
booklet

1. ALGEBRA
 - a. Factoring methods (common, difference of squares, & trinomial factoring)
 - b. Exponent rules (multiplying, dividing, power of power, negative, zero)
2. LINEAR RELATIONS
 - a. Equations (sloped, vertical, horizontal)
 - b. Graphs
 - c. Word problems
 - d. Linear systems (elimination, substitution)
3. QUADRATIC RELATIONS
 - a. Equations (standard, factored, vertex forms)
 - b. Quadratic formula and when to use it? discriminant?
 - c. Completing the square and when to use it
 - d. Graphs (from vertex and factored forms)
4. TRIGONOMETRY
 - a. SOH CAH TOA
 - b. Pythagorean theorem
 - c. Sine Law
 - d. Cosine Law
 - e. Similar triangles

Summarize everything you need to know about the above topics. Use your own (not copied from notes or internet) examples and concise (not long – but with enough detail) explanations. Include definitions and diagrams if necessary and don't forget to include at least one star ★ question.

Other topics you should know
+ practice can be found
online. Do some questions
from each topic in preparation
for DIAGNOSTIC Test.

UNIT 1

FUNCTIONS – journal

NAME: _____

1. FUNCTIONS
 - a. Definition use graphs & equations to help explain
 - b. Notation explanation and show how to evaluate with different inputs. Discuss how it may be confused with multiplication.
2. DOMAIN & RANGE
 - a. Definitions
 - b. Find from graphs
 - c. Find from equations
3. NEW FUNCTIONS (include parent graphs, tables, equations as well as examples of transformed equations with domain and range)
 - a. Square root
 - b. Rational
 - c. Absolute value
 - d. Cubic
 - e. Cube Root
 - f. Quartic
4. TRANSFORMATIONS example of a new function (not quadratic)
5. INVERSES
 - a. Definition
 - b. Find it from graph
 - c. Find it from equation

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UNIT 2

RATIONAL EXPRESSIONS – journal

NAME: _____

1. RESTRICTIONS and explain how/when you are allowed to cancel and when you cannot.
2. MULTIPLYING
3. DIVIDING
4. SUBTRACTING and explain LCD in your own words

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UNIT 3

QUADRATICS – journal

NAME: _____

1. Finish the quadratic summary from review journal if you haven't done that yet and insert a note in this journal where to look for those important topics.
2. FINDING EQUATIONS
 - a. given a table of values
 - b. given a graph
3. WORD PROBLEMS
 - a. What are the general equations for Revenue and Profit?
 - b. Explain how to set up a Revenue word problem. Show your own fully solved example that **doesn't** involve solving for a maximum.
 - c. Explain how to set up a Fence off an area problem. Show your own fully solved example that **does** involve solving for a maximum.
 - d. Explain how to set up a Motion problem and show a solution to the following
 - i. Suppose Stephanie drove 100 miles then increased her speed by 30mph for the following 200 miles. If the second part took 1 hour less than the first part, what was her average speed in the first part?
4. RADICALS
 - a. How to simplify
 - b. How to add/subtract
 - c. How to multiply/divide
 - d. How to rationalize denominators (MONOMIALS and BINOMIALS)
 - e. How to solve equations with radicals

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UNIT 4

EXPONENTIALS – journal

NAME: _____

1. EXPONENT RULES
 - a. Finish the algebra summary - exponent laws from review journal if you haven't done that yet and insert a note in this journal where to look for this important topic.
 - b. NEW RATIONAL EXPONENT RULE.
 - c. Show at least three complicated examples of simplifying expressions with exponents.
2. SOLVE EQUATIONS
 - a. Equations with variable in the base
 - b. Equations with variable in the exponent
 - c. Equations with variable in the exponent where bases cannot be matched.
3. EXPONENTIAL FUNCTION
 - a. Key characteristics of the exponential-growth parent graph and exponential-decay parent graph.
 - b. Transformations
 - i. Explain how horizontal compression can be 'collapsed' into the base of the exponential, and how the horizontal shift can be 'collapsed' into the vertical stretch.
 - ii. Summarize the general form of an exponential that uses minimal number of transformation constants. What do the constants represent?
 - iii. Sketch
4. FINDING EQUATIONS
 - a. Discuss 1st ratios and the case where they will be the same
 - b. Find equation from either a table of values or graph.
5. WORD PROBLEMS
 - a. Given % increase or decrease rate
 - b. Double or half-life problem

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UNIT 5

TRIG RATIOS – journal

NAME: _____

1. Finish the trigonometry from review journal if you haven't done that yet and insert a note in this journal where to look for these important topics.
2. UNIT CIRCLE
 - a. State the new definitions for primary trig ratios and secondary trig ratios
 - b. Describe the differences between principal, related acute and co-terminal angles. Use examples.
 - c. Explain how you can predict the sign of a trig ratio for any given angle that falls in the quadrants, or on the axes (by use of CAST and by use of definition from a.)
3. FINDING ANGLES - demonstrate, with the use of an example, and pictures of unit circle, how to find two angles within one positive revolution when performing
 - a. Inverse of sine to find $\theta_1, \theta_2 \dots etc$
 - b. Inverse of cosine to find θ_1, θ_2
 - c. Inverse of tangent to find θ_1, θ_2
4. FINDING EXACT RATIO VALUES
 - a. Show examples that use special triangles.
 - b. Show examples that involve the use of Pythagorean Theorem.
5. TRIG IDENTITIES
 - a. Write down the things you should try every time you prove trig identities
 - b. Give an example of a complicated trig proof, explain all steps

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UNIT 6

SINUSOIDALS – journal

NAME: _____

1. TRIGONOMETRIC FUNCTIONS
 - a. Distinguish between non-periodic, periodic, non-sinusoidal, and sinusoidal graphs.
 - b. Parent graphs of sine and cosine (tangent?)
2. KEY CHARACTERISTICS definitions, and how to find these from the graph and from the equation
 - a. Axis
 - b. Max & Min
 - c. Amplitude
 - d. Phase shift
 - e. Period
3. SOLVING
 - a. For dependent variable given independent variable
 - b. For independent variable given dependent variable – show how to get all solutions
4. SKETCHING
 - a. From equation and explain the process
 - b. From word problem
5. FINDING EQUATIONS

From word problem and explain the process
6. WORD PROBLEMS
 - a. Explain how to find the period and the k value given revolutions per second.
 - b. Given a word problem that describes something circular making revolutions, describe what the constants and variables would mean in the context of the word problem. (radius, speed, starting point, axle height, height, time)

Summarize everything you need to know about the above topics. Use your own (not copied from notes or internet) examples and concise (not long – but with enough detail) explanations. Include definitions and diagrams if necessary and don't forget to include at least one star ★ question.

UNIT 7

SEQUENCES & SERIES – journal

NAME: _____

1. DEFINITIONS - What is the difference between the following
 - a. Sequence and series
 - b. Arithmetic and geometric
 - c. Explicit and recursive
 - d. Simple interest and compound interest
2. FORMULAS and EX
 - a. Arithmetic
 - b. Geometric
3. RECURSION FORMULAS ex
4. WORD PROBLEMS - Show a solution to the following, explain/justify your reasoning.
 - a. Erika has 347 in her safety deposit box. At the end of the week, she deposits \$5. Each subsequent week, she deposits \$3 more than she deposited the previous week. How much money will be in the deposit box at the end of 20 weeks.
 - b. A transport truck that was bought at \$149 500, depreciates in value by 15% each year. Determine the truck's value at the end of the seventh year.
 - c. Suppose you earn 25 ¢ on September 1st, 50 ¢ on September 2nd, 75 ¢ on September 3rd, and so on. How much do you earn on the last day of September?
 - d. A sweepstakes gives away \$1 000 000 in prizes. The first ticket drawn wins \$10, the second ticket wins \$30, the third ticket wins \$90, and so on. How many tickets can the sweepstakes afford to draw? How much money is left after all the possible prizes are awarded?

Summarize everything you need to know about the above topics. Use your own (not copied from notes or internet) examples and concise (not long – but with enough detail) explanations. Include definitions and diagrams if necessary and don't forget to include at least one star ★ question.

UNIT 8

FINANCE – journal

NAME: _____

1. DISTINGUISH between the following (include words to look for within the question or a flowchart)
 - Simple vs compound interest questions
 - Annuity vs single compound interest questions
 - Future value vs present value questions.
2. SIMPLE INTEREST ex
3. COMPOUND INTEREST ex
4. ANNUITIES pv and fv ex

Summarize everything you need to know about the above topics. Use your own (not copied from notes or internet) examples and concise (not long – but with enough detail) explanations. Include definitions and diagrams if necessary and don't forget to include at least one star ★ question.