

Memorize the red stuff and write it on your formula sheet when you get in the test

Mathematics 30–2 Formula Sheet

The following information may be useful in writing this examination.

Relations and Functions

Graphing Calculator Window Format

$$x: [x_{\min}, x_{\max}, x_{\text{scl}}]$$

$$y: [y_{\min}, y_{\max}, y_{\text{scl}}]$$

Exponents and Logarithms

$$y = a^x \leftrightarrow x = \log_a y$$

$$\log_b c = \frac{\log_a c}{\log_a b}$$

Laws of Logarithms

$$\log_b (M \cdot N) = \log_b M + \log_b N$$

$$\log_b \left(\frac{M}{N} \right) = \log_b M - \log_b N$$

$$\log_b (M^n) = n \log_b M$$

Exponential functions

$$y = a \cdot b^x$$

a=initial value

b=rate of change as a decimal

Logarithmic functions

$$y = a + b \cdot \ln x$$

Sinusoidal functions

$$y = a \cdot \sin(bx + c) + d$$

$$\text{Period} = \frac{2\pi}{b}$$

a = amplitude

b = used to calculate period

c = horizontal or phase shift

d = midline

Quadratic equations

$$\text{For } ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Probability

For repetitions: $\frac{n!}{a!b!c!}$

$$n! = n(n-1)(n-2)\dots 3 \cdot 2 \cdot 1, \\ \text{where } n \in N \text{ and } 0! = 1$$

$${}_nP_r = \frac{n!}{(n-r)!} \quad \text{order is important}$$

$${}_nC_r = \frac{n!}{(n-r)!r!} \quad \text{order is not important}$$

$${}_nC_r = \binom{n}{r}$$

$$P(A \cup B) = P(A) + P(B) \quad \text{Mutually Exclusive}$$

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) \quad \text{Non Mutually Exclusive}$$

$$P(A \cap B) = P(A) \cdot P(B) \quad \text{Independent Events}$$

$$P(A \cap B) = P(A) \cdot P(B | A) \quad \text{Dependent Events}$$

Logical Reasoning

A' Complement

\emptyset Empty set

\cap Intersection

\subset Subset

\cup Union

and $\rightarrow \times$

or $\rightarrow +$

With time, distance and speed: $\text{time} = \frac{\text{distance}}{\text{speed}}$



1. It's 11 PM the night before the diploma exam and you haven't finished reviewing the entire course. You still have 2.5 units left to study. Which of the following is your best choice given the circumstances?
 - a. Continue reviewing and doing practice questions on the exam bank until 3 AM
 - b. Spend a few minutes looking over the assignments from the last units and then go to bed.
2. You wake up late the morning of the exam and don't have time to eat breakfast. What should you do?
 - a. Take a snack with you to eat on the way or when you're waiting to begin the exam.
 - b. Don't worry about it. It's more important to get there on time than waste a few more minutes looking for something to eat.
3. Circle the 3 most important things for you to do in the day or two before the diploma exam.
 - i. Confirm the time and date of the exam.
 - ii. Confirm the location of your exam.
 - iii. Map out the location and the time it takes to get to the exam in rush hour traffic.
 - iv. Check that your calculator is an approved model and that you have fresh batteries.
 - v. Set a back-up alarm clock in case your regular alarm doesn't go off.
 - vi. Set out your supplies so you don't forget them (calculator, batteries, pencils/erasers, water bottle, and ID: student ID card, driver's license, or passport).
4. State if the following statements about test strategies are true or false.
 - a. The first thing you should do is write down things you need to remember (memorize stuff from formula sheet or other important info and reminders).

 - b. Read each question fully, and be sure you can state what it is asking for.

 - c. You should not write on the test booklet. Avoid drawing diagrams, underlining important words, or showing steps.

 - d. If a question takes longer than 4 minutes, you should make a guess, move on, and don't look at it again.

 - e. For multiple choice questions, you can eliminate obvious distractors by crossing out the answers you know are wrong.

 - f. It's better to leave a question blank than to guess.

 - g. When you're finished the test, you should leave right away (even if you only spent an hour on it). If you stay, you might start second guessing your answers.

5. The following numerical response answers were written incorrectly. Identify the mistake and correct it.

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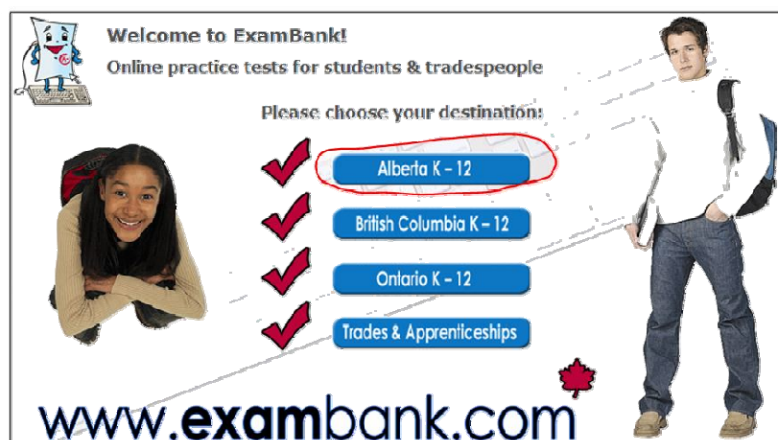
Important Websites:

Online Practice Exams with Exambank.com

<http://www.exambank.com/>

log in: phrd.adlc

password: online



Practice Diploma Exams with Quest A+ (under practice tests)

<https://questaplus.alberta.ca/>



The KEY Study Guide - Alberta Mathematics 30-2

Bookstores (Chapters, Indigo)

www.castlerockresearch.com

\$20-30

Examination Specifications and Design

Each Mathematics 30–2 Diploma Examination is designed to reflect the core content outlined in the [Mathematics 30–2 Program of Studies](#). The examination is limited to those outcomes that can be measured by a machine-scored paper-and-pencil test. Therefore, the percentage weightings shown below will not necessarily match the percentage of class time devoted to each topic. The diploma examination was developed to be completed in **2 1/2 hours**; however, an additional **1/2 hour** is allowed for students to complete the exam.

The content for the Mathematics 30–2 Diploma Examinations in the 2014–2015 school year is emphasized as follows.

Specifications

<i>Question Format</i>	<i>Number of Questions</i>	<i>Emphasis</i>
Multiple Choice	28	70%
Numerical Response	12	30%

Conceptual, procedural, and problem-solving cognitive levels are addressed throughout the examination. The approximate emphasis of each cognitive level is given below.

<i>Multiple Choice and Numerical Response</i>	<i>Emphasis</i>
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Conceptual	34%
Procedural	30%
Problem Solving	36%

<i>Diploma Examination Content</i>	<i>Emphasis</i>
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Logic & Reasoning	17%
Probability	33%
Relations and Functions	50%
Research Project	0%

Machine-Scored Questions

Information required to answer **multiple-choice** and/or **numerical-response questions** is often located in a box preceding the question. The questions that require the use of the information given in the box will be clearly stated above the box: e.g., “*Use the following information to answer questions 3 and 4.*”

For **multiple-choice questions**, students are to choose the correct or best possible answer from the four alternatives.