# ALBERTA DISTANCE LEARNING CENTRE
## Mathematics 30-1
### MAT3791
## Workbook 2.4

**Student's Questions and Comments**

**FOR STUDENT USE ONLY**

**Student Name:**

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**FOR ADLC USE ONLY**

**Assigned to**

_____

**Marked by**

_____

**Date received**

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**Summary**

| | Marks Earned | Total Marks | Percent |
|---|---|---|---|
| Practice 2.4A | **I have ___ /8 and ___%** | | |
| Practice 2.4B | **I have ___ /8 and ___%** | | |
| Practice 2.4C | **I have ___ /8 and ___%** | | |
| Practice 2.4D | **I have ___ /8 and ___%** | | |
| Explore Your Understanding 2.4 | | | |

**Teacher's Comments:**

_____

**Teacher's Signature**

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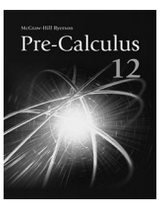


*Pre-Calculus 12*
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## Explore Your Understanding Assignment 2.4

This assignment includes 18 marks. You are expected to complete **15 marks** worth of work. If you complete more than this, all completed questions will be used to assign a grade. For example, if you complete all 18 marks worth of work, your assignment total will be 18 instead of 15. You can also complete a question and label it "DO NOT MARK" if you are not confident in your work. Your teacher will then give feedback on your response, which will help clarify any misconceptions, but will not count it towards your required mark total. Please contact your teacher if you have any questions.

(1) 1. a. Explain the difference between an equation and an identity.

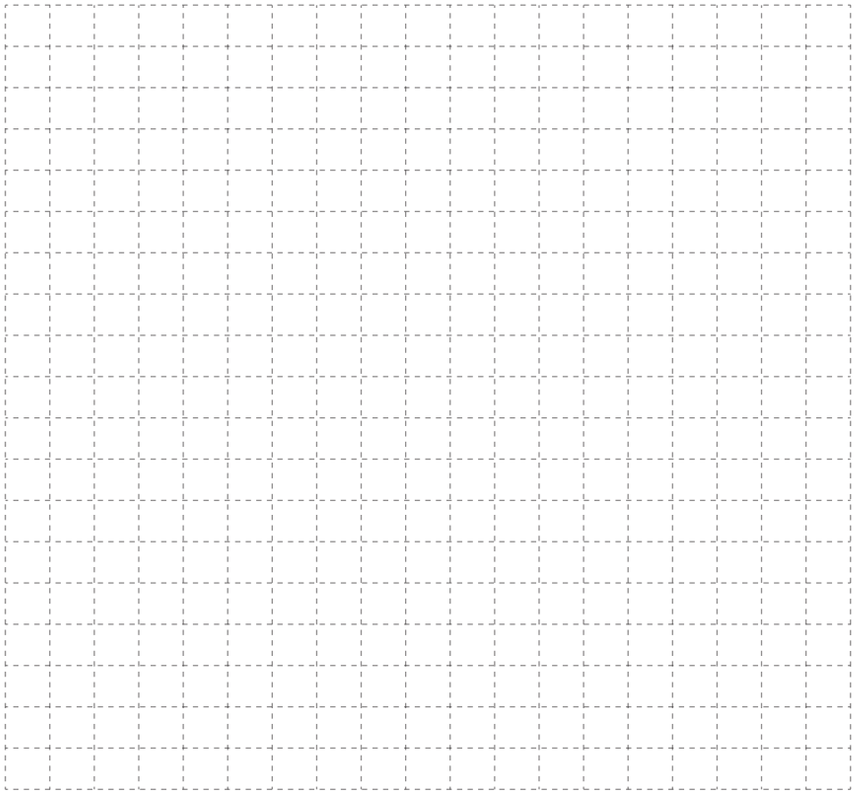
(1) b. Explain the difference between verifying an identity and proving an identity.

2. Consider the possible identity $\tan^2 x(\cos^2 x + 1) + \cos^2 x = \sec^2 x$.

(1) a. State any non-permissible values.

(1) b. Attempt to verify the possible identity numerically.

(1) c. Attempt to verify the possible identity graphically.



(2) d. Either prove the identity, or state a value for $x$ that disproves the identity.

3. Consider the possible identity $\cos 2x = 2\sin x \cos x$.

(1) a. State any non-permissible values.

(1) b. Attempt to verify the possible identity numerically.

(1) c. Attempt to verify the possible identity graphically.

(1) d. Either prove the identity, or state a value for $x$ that disproves the identity.

(1) 4. a. Show the identity $\tan(2\alpha) = \frac{2\tan\alpha}{1-\tan^2\alpha}$ can be derived from a sum or difference identity.

(1) b. Show the identity $\cos(2\alpha) = 1 - 2\sin^2\alpha$ can be derived from a sum or difference identity and the Pythagorean identity.

(2) 5. Algebraically determine the exact value of $\tan\frac{11\pi}{12}$. Simplify your answer if possible.

(3) 6. Algebraically solve $\cos x \sin 2x - 2 \sin x = \frac{1}{4}$, using radians. (Hint: Start with a double angle identity.)

When this workbook is complete, submit it using a method described at the beginning of this *Workbook*. Next, complete *Test Your Understanding Quiz 2.4* online in Moodle.


Once all of your Unit 1 and Unit 2 assignments have been marked, you will need to write the midterm exam. This is a supervised exam and can be written with an approved exam supervisor. If you have questions, please contact your teacher.


Feel free to begin *Lesson 3.1* while you wait for your assignments to be marked.

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