MA 10 Learning Guides

Math 10
Learning
Guide 0

Course
Overview

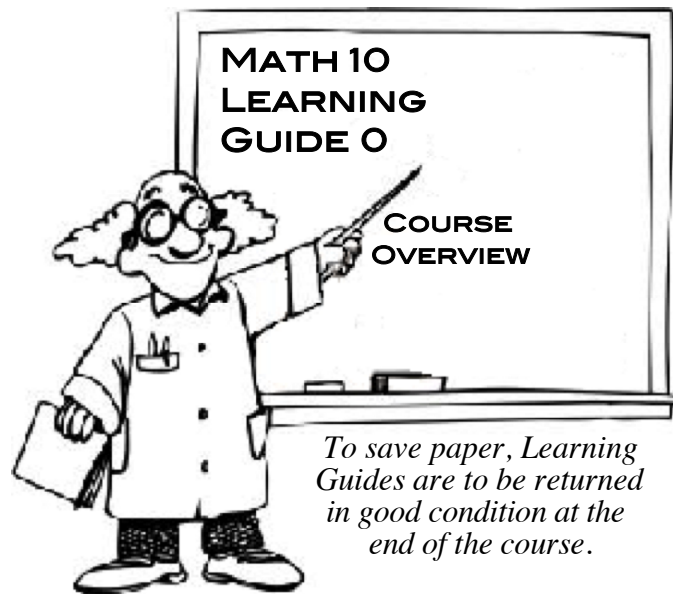*To save paper, Learning Guides are to be returned in good condition at the end of the course.*

What Am I Going To Learn?

Welcome to Foundations of Math & Precalculus 10! Our goal at Frances Kelsey is to help you become familiar with the material in Math 10.

- Keep in contact with your marking teacher.

- Work with a partner.

- Work on Math in the Math Work Area!

What Will I Do?

- Get a LG lesson

- Mark my work.

- Go over any problems with my teacher

Work in Pairs, Not alone!

What Do I Need To Start?

To complete this Math course you will need:

Text: Foundation & Pre-calculus Math 10 (*Pearson*)

Worksheets: See Resource Package

Equipment: Scientific calculator
Loose-leaf note book with dividers
Graph Paper

What Do The Guides Look Like?

- How many guides?   **18**

- What is in the guide?

    - **Reading assignments** (pre-learning)

    - **Exercises**.
      organized by **A/B/C** levels of difficulty to check your skills and understanding

What Should My Binder Look Like?

|	
Marks	Keep track of your scores.
Notes	Any notes or LG overviews.
Practice	Keep this section for future reference and study.
Glossary	Includes new terms and definitions.

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What Do The Tests Look Like?

- Multiple Choice
- Short Answer
- Solve and Describe.

How Is The Course Weighted?

80%	Learning Guides 1-18
20%	Provincial Exam

How Are The Guides Weighted?

20%	Seminar Participation Flex Block participation LG Homework
80%	LG Test (or alternate assessment)

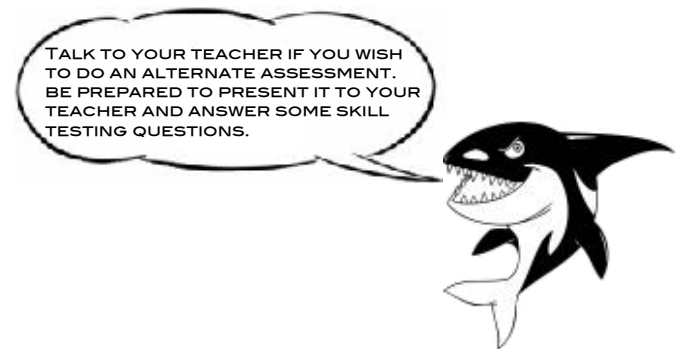**WORK IN A MATH AREA!**
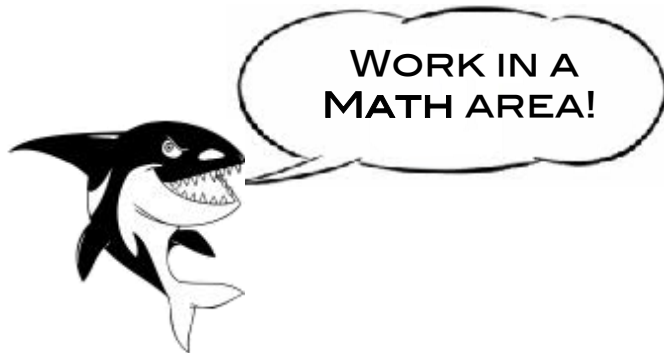
How Do I Get Test Permission?

- attending the LG seminar
- taking notes on the LG
- attending and working in flex blocks
- doing the work in the LG and -marking it
- doing the review package questions,
- studying
- get green slip signed

How Else Can I Show What I Know?

All alternate forms of assessment must explain **each** Learning Guide Expectations and give an **original example with a detailed step-by-step explanation.**

Some forms of alternate assessment are:

- Make a booklet or poster,
- Produce a video,
- Do an oral presentation
- Make up your own evaluation

TALK TO YOUR TEACHER IF YOU WISH TO DO AN ALTERNATE ASSESSMENT. BE PREPARED TO PRESENT IT TO YOUR TEACHER AND ANSWER SOME SKILL TESTING QUESTIONS.

How Can I Be Successful In Math 10?

- attend at least 2 regular classes per week
- attend 2 flex blocks per week
- work in the Math Area
- do homework in this course
- finish the course in 5 months
- finish each Learning Guide in one week
- ask for help!
- work with a partner
- 3 rewrites are possible

Math 10
Learning
Guide 1 & 2

Conversions,
Surface area
& Volume
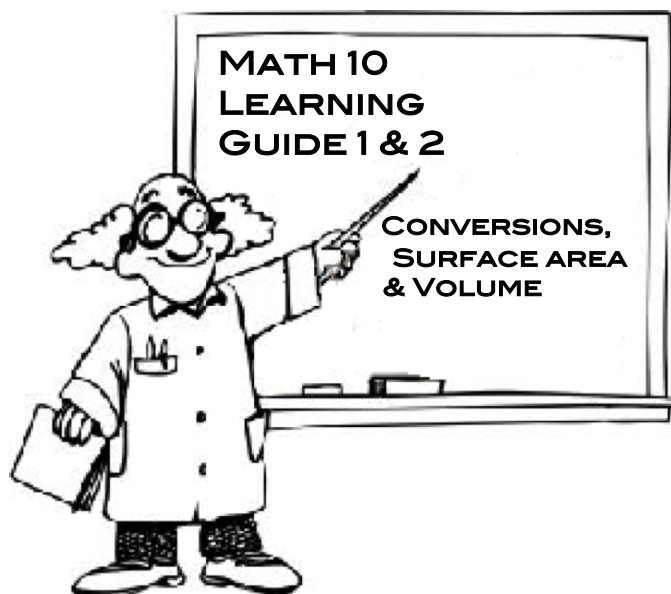
What Are These Guides About?

- You can use proportional reasoning to convert measurements.

- The volume of a right pyramid or cone is related to the volume of the enclosing right prism or cylinder.

- The surface area of a right pyramid or cone is the sum of the areas of the faces and the curved surfaces.

- The surface area of a sphere is related to the curved surface area of the enclosing area.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

SI System of Measurement	Imperial Units
Referent	Conversion Factor
Unit Analysis	Proportion
Apex	Right Pyramid
Right Cone	Slant Height
Lateral Area	Sphere

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What Am Going to Learn in LG 1?

After this guide you should be able to do the following:

1.1 Imperial Measures of Length

Which imperial unit is the most appropriate to measure the length of a car?

How many 20 inch pieces can be cut from board 8 feet long?

1.3 Relating SI and Imperial Units

Convert 10 inches to centimeters.

Convert 80 centimeters to feet and the nearest inch.

Write a proportion to convert 4.2 meters to feet.

Megan is 5 foot 4 inches and Emily is 167 centimeters. Who is taller?

What Should I Do?

1.1 Imperial Measures of Length

Read Pages p. 7-10

Practice Questions

A	p.11 #3, 5a, 6ab, 7	20 min.
B	p.11 #8, 9, 11, 12, 13, 15a, 16, 18	30 min.
C	p.12 #19, 20, 22	10 min.

1.3 Relating SI and Imperial Units

Read Pages p. 18-21

Practice Questions

A	p.22 #4, 5, 6	25 min.
B	p.22 #7a, 8, 9, 10, 11, 13a, b	20 min.
C	p.23 #15, 17	10 min.

Checkpoint 1 (p. 24-5)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

1.1	p.25 #1, 3, 4	
1.3	p.25 #7, 8	15 min.

Am I ready to move on?

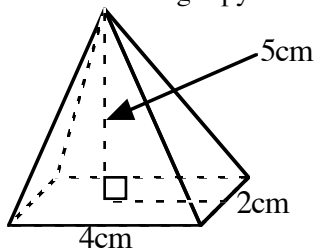Bring your marked guide and checkpoint work with you when you come to get permission for the LG 1 Quiz.

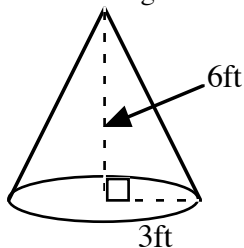## What Am Going to Learn in LG 2?

After this guide you should be able to do the following:

1.4 Surface Areas of Right Pyramids & Right Cones

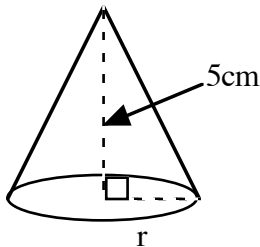Find the surface area of the right pyramid below:

5cm

2cm

4cm

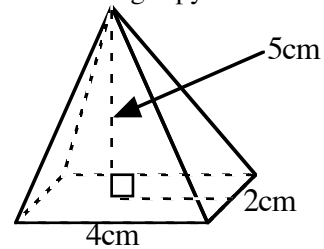Find the surface area of the right cone below:

6ft

3ft

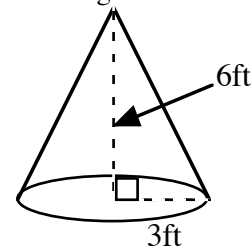Given the volume of the right cone below is 200cm^3, find the radius to the nearest cm.

5cm

r

1.5 Volumes of Right Pyramids & Right Cones
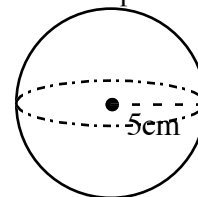
Find the volume of the right pyramid below:

5cm

2cm

4cm

Find the volume of the right cone below:
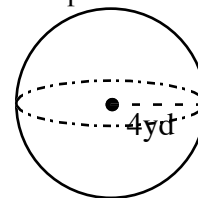
6ft

3ft

1.6 Surface Area and Volume of a Sphere
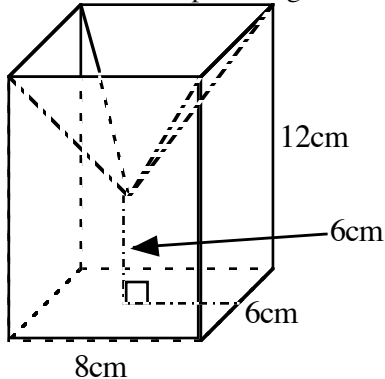
Find the surface area of the sphere below:

5cm

Find the volume of the sphere below:

4yd

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1.7 Solving Problems Involving Objects

Find the volume of the composite figure below:

12cm
6cm
6cm
8cm

What should I do?

1.4 Surface Areas of Right Pyramids & Right Cones

Read Pages p. 26-33

Worksheet

Do LG 2 **worksheet** on **Pythagoras**	30 min.

Practice Questions

A	p.34 #4, 5, 6, 7, 8	30 min.
B	p.34 #9, 10, 13, 15, 16	30 min.
C	p.35 #20	5 min.

1.5 Volumes of Right Pyramids & Right Cones

Read Pages p. 36-41

Practice Questions

A	p.42 #4, 6, 8, 9	25 min.
B	p.42 #10, 11, 15, 16, 18	35 min.
C	p.43 #21	10 min.

1.6 Surface Area and Volume of a Sphere

Read Pages p. 45-50

Practice Questions

A	p.51 #3, 4, 5	25 min.
B	p.51 #7, 8, 11, 13abc, 17a, 18	35 min.
C	p.52 #23, 24	10 min.

1.7 Solving Problems Involving Objects

Read Pages p. 55-58

Practice Questions

A	p.59 #3	20 min.
B	p.59 #5, 6, 9a, 10	20 min.

Am I ready to move on?

Read the Study Guide on pages 62 & 63.

Review (p.64)

Try the following review question

1.1	p.64 #1, 3, 4	
1.3	p.64 #6, 7, 8	
1.4	p.64 #9, 10, 12	60 min.
1.5	p.65 #15. 17. 19	
1.6	p.66 #20, 21, 22, 23	
1.7	p.66 #25, 27	

Optional Practice Test (p.64)		
	p.67 #1, 2, 3, 4, 6	20 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 1 & 2 and review package with you when you come to get test permission.

MA 10 Learning Guides

Math 10
Learning
Guide 3, 4 & 5

Trigonometry
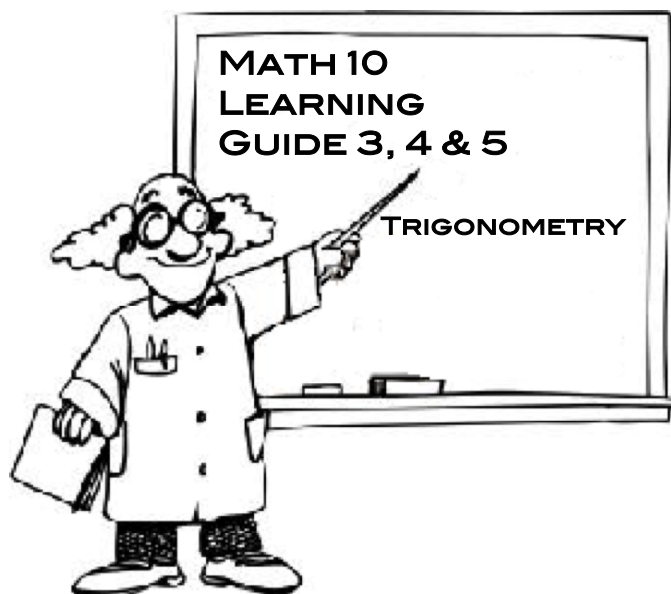
What Are These Guides About?

- The ratio of any two sides remains constant even if the triangle is enlarged or reduced.

- You can use the ratio of the lengths of two sides to determine the measure of one of the acute angles.

- You can use the length of one side and the measure of an acute angle to determine the length of another side of the triangle.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

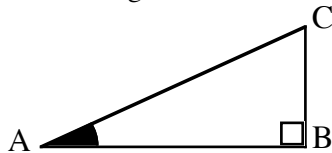|	
Angle of Inclination	Angle of Depression
Tangent Ratio	Hypotenuse
Opposite Side	Adjacent Side
Indirect Measurement	Sine Ratio
Cosine Ratio	

MA 10 Learning Guides
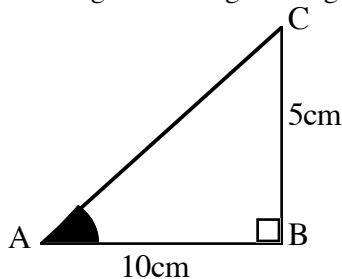
What Am Going to Learn in LG 3?

After this guide you should be able to do the following:

2.1 The Tangent Ratio

Label the Opposite and Adjacent sides in the triangle below then state the Tangent ratio:

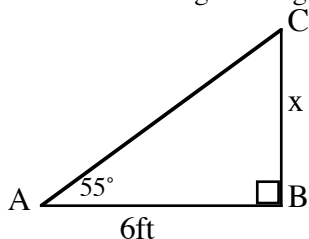Find the indicated angle in the right triangle below:

To the nearest degree, determine the measure of <x for each value of Tan x.

    a)   Tan x = 0.125

    b)   Tan x = $\dfrac{1}{2}$

2.2 Using the Tangent Ratio to Calculate Lengths

Find the indicated side in the right triangle below.

What should I do?

2.1 The Tangent Ratio

Read Pages p. 70-74

Worksheet

Do LG 3 **worksheet** on **Similar Triangles**	15 min.

Practice Questions

A	p.75 #3, 4, 5	20 min.
B	p.75 #6abc, 8, 9ab, 10ac, 11ab, 13, 15, 16, 19	45 min.
C	p.76 #21	5 min.

2.2 Using the Tangent Ratio to Calculate Lengths

Read Pages p. 78-81

Worksheet

Do LG 3 **worksheet** on **Equations**	15 min.

Practice Questions

A	p.81 #3, 4, 5	25 min.
B	p.82 #6, 7, 9, 10, 11	25 min.
C	p.83 #15	10 min.

Checkpoint 1 (p. 87-8)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

2.1	p.88 #1, 2, 3	30 min.
2.2	p.88 #4, 5	

Am I ready to move on?

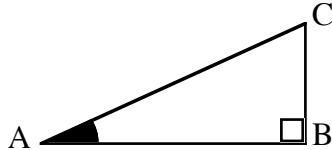Bring your marked guide and checkpoint work with you when you come to get permission for the LG 3 Quiz.
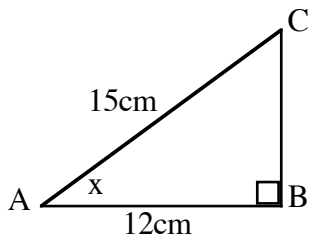
What Am Going to Learn in LG 4?

After this guide you should be able to do the following:

2.4 The Sine and Cosine Ratios

Label the Opposite and Adjacent sides in the triangle below then state the Sin & Cos ratios:

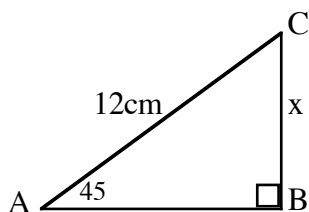Find the indicated angle in the right triangle below:

To the nearest degree, determine the measure of <x for each ratio.

a) Sin x = 0.125

b) Cos x = $\dfrac{1}{2}$

2.5 Using the Sin & Cos Ratios to Calculate Lengths

Find the indicated side in the right triangle below.

Student Directions

2.4 The Sine and Cosine Ratios

Read Pages p. 89-94

Practice Questions

A	p.95 #4, 5, 6	20 min.
B	p.95 #7, 9, 10ab 11, 12, 14, 15, 16	30 min.
C	p.96 #17	5 min.

2.5 Using the Sin & Cos Ratios to Calculate Lengths

Read Pages p. 97-100

Practice Questions

A	p.101 #3, 4	25 min.
B	p.101 #5, 6, 7, 8, 9, 10, 12a	45 min.
C	p.102 #14	5 min.

Checkpoint 2 (p. 103-4)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

2.4	p.104 #1, 2, 3a	30 min.
2.5	p.104 #4, 5	

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 4 Quiz.
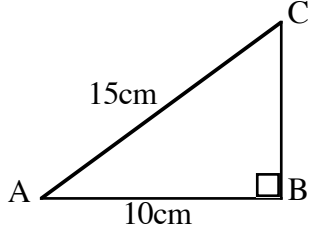
MA 10 Learning Guides
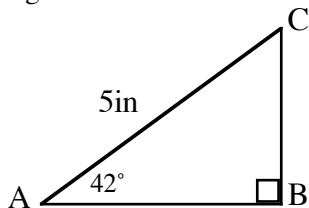
What Am Going to Learn in LG 5?

After this guide you should be able to do the following:
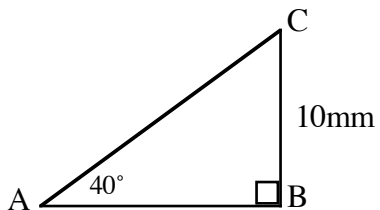
2.6 Applying the Trigonometric Ratios

Solve the following right triangle below given 2 sides:

Solve the following right triangle below given one side and one acute angle:
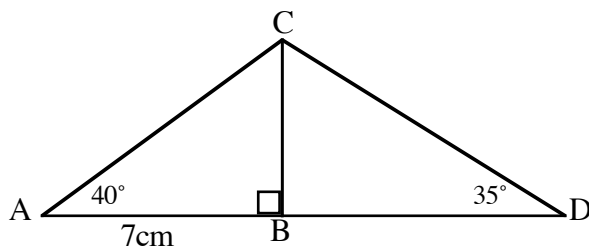

Find the perimeter of the following triangle using trigonometric ratios.

2.7 Solving Problems More than One Right Triangle

Calculate a side length CD using more than one right triangle.

Student Directions

2.6 Applying the Trigonometric Ratios

Read Pages p. 105-110

Practice Questions

A	p.111 #3, 4, 5	25 min.
B	p.111 #6abc, 7, 8, 10, 11, 12	25 min.
C	p.112 #16	5 min.

2.7 Solving Problems More than One Right Triangle

Read Pages p. 113-117

Practice Questions

A	p.118 #3abc, 4	25 min.
B	p.118 #5abc, 6, 8, 9, 11, 13, 14	35 min.

Am I ready to move on?

Read the Study Guide on pages 122 & 123.

Review (p.124-6)

Try the following review question

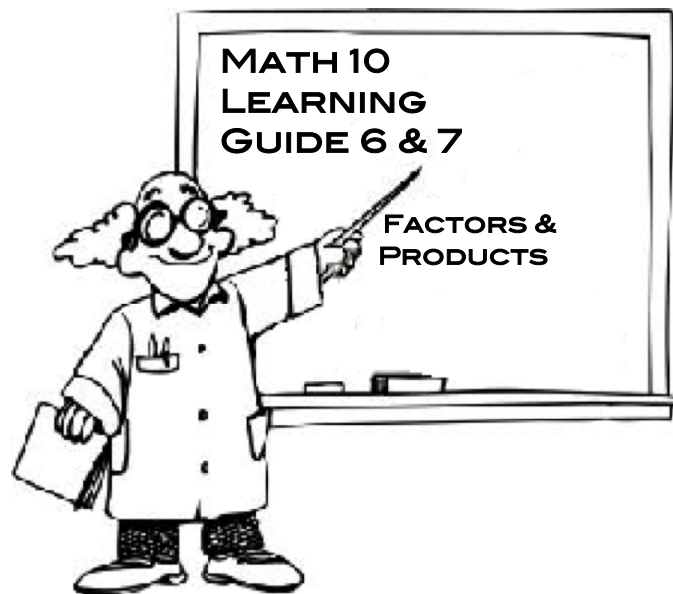| 2.1	p.64 #1, 3, 4, 5	
2.2	p.64 #6, 7, 8	
2.4	p.64 #11, 12a, 13, 14	
2.5	p.65 #15. 16, 17	60 min.
2.6	p.66 #18, 20, 21	
2.7	p.66 #22, 23	

Optional Practice Test (p.127)

	p.67 #1, 2, 4, 5, 6	30 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 3, 4 & 5 and review package with you when you come to get test permission.

Math 10
Learning
Guide 6 & 7

Factors &
Products

What Are The Big Ideas?

• Arithmetic operations on polynomials are based on the arithmetic operations on integers and have similar properties.

• Multiplying and factoring are inverse processes, and a rectangle diagram can be used to represent them.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

Prime Factorization	Greatest Common Factor
Least Common Multiple	Perfect Cube
Cube Root	Radicand
Radical	Index
Difference of Squares	Perfect Square Trinomial
Factoring by Decomposition	

MA 10 Learning Guides

What Am Going to Learn in LG 6?

After this guide you should be able to do the following:

3.1 Factors and Multiples of Whole Numbers

Write 120 as a product of prime factors.
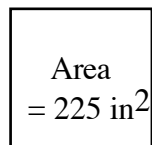
Find the greatest common factor of 54 and 72.

Find the least common multiple of 24, 32 and 48

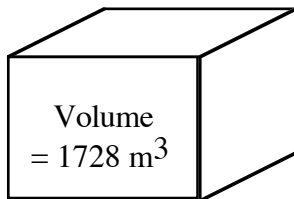### 3.2 Perfect Squares, Perfect Cubes, and Their Roots

Find the square root of 400 using prime factors.

Use factoring to determine whether 4096 is a perfect square or perfect cube.

Determine the edge length of the following square:

Area = 225 in^2

Determine the edge length of the following cube:

Volume = 1728 m^3

3.3 Common Factors of a Polynomial

Use algebra tiles to factor $x^2 + 3x$.

Factor the following: $12x^3 + 8x^2$

3.5 Polynomials of the Form $x^2 + bx + c$

Use algebra tiles to factor $x^2 + 4x + 4$.
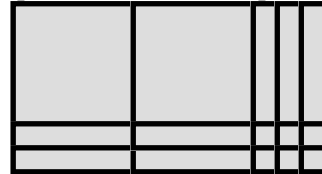
Multiply the following binomials: $(x + 4)(x - 7)$

Factor the following trinomial: $x^2 + 2x - 24$

Factor the following trinomial: $3x^2 + 3x - 6$

3.6 Polynomials in the Form $ax^2 + bx + c$

Write the multiplication sentence represented by:

Expand and simplify: $(3x + 5)(2x - 3)$

Use algebra tiles to factor: $3x^2 + 4x + 1$

Factor $2x2 + 11x - 6$. Check by expanding.

MA 10 Learning Guides

What Should I Do?

3.1 Factors and Multiples of Whole Numbers
Read Pages p. 134-139

Practice Questions

A	p.140 #3, 4, 5	15 min.
B	p.140 #6ace, 8ace, 9ab, 10ace, 11ac, 15ab, 16ac, 19a, 20a	45 min.

3.2 Perfect Squares, Perfect Cubes, and Their Roots
Read Pages p. 142-146

Practice Questions

A	p.146 #4, 5 (use prime factoring)	15 min.
B	p.146 #6abc, 7, 8, 10, 12a	15 min.
C	p.147 #17	5 min.

Worksheet

Do the LG 6 **worksheet** on **polynomial operations.**	30 min.

3.3 Common Factors of a Polynomial
Read Pages p. 150-154

Practice Questions

A	p.155 #5, 6	15 min.
B	p.155 #7ace*, 8abd, 9ace*, 10ace, 11, 14, 15, 16abc, 17	45 min.

* don't use tiles

3.5 Polynomials of the Form $x^2 + bx + c$
Read Pages p. 159-165

Practice Questions

A	p.166 #4, 5*, 6abc, 7b	20 min.
B	p.166 #8a, 10, 11, 13, 14aceg, 15aceg, 17, 19abd, ce	30 min.
C	p.167 #23a	5 min.

* don't use tiles

3.6 Perfect Squares, Perfect Cubes, and Their Roots
Read Pages p. 168-176

Practice Questions

A	p.177 #5, 6ace*, 7	15 min.
B	p.177 #8, 9ace, 10bce, 12, 13aceg, 15aceg, 16, 18abc, 19aceg, 20a	45 min.
C	p.178 #21a, 22a	15 min.

* don't use tiles

Checkpoint 1 (p. 148-9)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

3.1	p.149 #1ab, 2ab, 3ab, 4ab	30 min.
3.2	p.149 #6-8 (abc), 9a	

Checkpoint 2 (p. 179-81)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

3.3	p.180 #1, 2 (use alg. tiles i, iv)	45 min.
3.5	p.180 #5, 6, 7	
3.6	p.181 #8acf, 9acf	

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the in-class LG 6 Quiz.

What Am Going to Learn in LG 7?

After this guide you should be able to do the following:

3.7 Multiplying Polynomials

Expand and simplify: $(x + 1)(x^2 + 3x + 2)$

Expand and simplify: $(5x + 6)(5x + 6)$

Expand and simplify: $(2x + 7)(2x - 7)$

Expand and simplify: $(x^2 - 3x + 5)(x^2 + 2x - 1)$

3.7 Factoring Special Products

Factor: $x^2 + 12x + 36$

Factor: $4x^2 - 25y^2$

Factor: $8x^2 - 72y^2$

What should I do?

3.7 Multiplying Polynomials

Read Pages p. 182-185

Practice Questions

A	p.186 #4ac, 5bef		15 min.
B	p.186 #6a (i, ii, v, vi), 7a, 8ac, 9ad, 10ab, 11, 13ac, 15adf, 17a		45 min.
C	p.187 #18ab, 19ace, 20, 21acd,		20 min.

3.8 Factoring Special Polynomials

Read Pages p. 188-193

Practice Questions

A	p.194 #4aceg, 5, 6		20 min.
B	p.194 7a, 8acfacc, 10ace, 11ace, 12, 13, 15a, 18		45 min.
C	p.195 #19a, 20, 21		20 min.

Am I ready to move on?

Read the Study Guide on pages 196 & 197.

Review (p.198)

Try the following review question

3.1	p.198 #1ac, 2ac, 3, 5ad	
3.2	p.198 #6-10	
3.3	p.199 #11-14, 15ab*, 16ab*	
3.5	p.199 #18, 19, 20a, 21	90 min.
3.6	p.199 #23	
3.7	p.200 #27ab, 28ab, 29a, 30	
3.8	p.200 #32-35	

* use algebra tiles

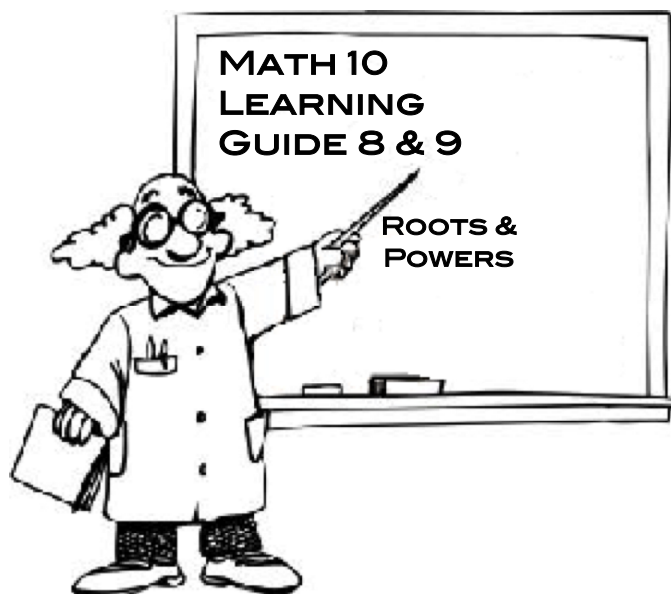| **Optional Practice Test (p.201)**		
	p.201 #1, 2, 3, 6, 7	3- min.

How Do I Show My Understanding?

Bring your marked guide work for LG 6 & 7 and review package with you when you come to get test permission.

LG TESTS HAVE 3 PARTS:

PART A: MULTIPLE CHOICE
PART B: FREE RESPONSE
PART C: SOLVE & DESCRIBE.

MA 10 Learning Guides

Math 10
Learning
Guide 8 & 9

Roots &
Powers

What Are The Big Ideas?

- Any number that can be written in the fraction m/n, n ≠ 0, where m and n are integers, is rational.

- Exponents can be used to represent roots and reciprocals of rational numbers.

- The exponent laws can be extended to include powers with rational and variable bases, and rational exponents.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

Irrational Number	Real Number
Entire Radical	Mixed Radical

MA 10 Learning Guides

What Am Going to Learn in LG 8?

After this guide you should be able to do the following:

4.1 Estimating Roots

Evaluate the following:

    a) $\sqrt{49}$ b) $\sqrt[3]{-64}$

Evaluate $\sqrt{18}$ and explain the strategy you used.

4.2 Irrational Numbers

Rational or Irrational?

    a) $\sqrt{\dfrac{4}{25}}$ b) $\sqrt[3]{25}$

Locate $\sqrt{8}$ on a number line.

4.3 Mixed and Entire Radicals

Write each radical in simplest form:

    a) $\sqrt{24}$ b) $\sqrt{48}$

Write each radical in simplest form:

    a) $\sqrt[3]{128}$ b) $\sqrt[3]{128}$

Write each mixed radical as an entire radical:

    a) $3\sqrt{5}$ b) $-2\sqrt{6}$

What should I do?

4.1 Estimating Roots

Read Pages p. 204-205

Practice Questions

A	p.206 #1-3 use calc., 5	15 min.

4.2 Irrational Numbers

Read Pages p. 207-210

Practice Questions

A	p.211 #3, 4	5 min.
B	p.212 #6, 7, 8, 11, 12, 14, 15, 16a, 19	25 min.

4.3 Mixed and Entire Radicals

Read Pages p. 213-217

Practice Questions

A	p.218 #3, 4, 5	15 min.
B	p.218 #9, 10acegi, 11acegi, 12acegi, 14, 15, 16, 17, 18, 21, 22a	45 min.
C	p.219 #25	5 min.

Checkpoint 1 (p. 220-1)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

4.1	p.221 #1, 2	
4.2	p.221 #4, 5, 6a, 7, 8	30 min.
4.3	p.221 #9, 11	

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 8 Quiz.

MA 10 Learning Guides

What Am Going to Learn in LG 9?

After this guide you should be able to do the following:

4.4 Fractional Exponents and Radicals

Evaluate the following:

a) $8^{\frac{1}{3}}$

b) $16^{\frac{1}{4}}$

Write each radical as a power:

a) $\sqrt{49}$

b) $\sqrt[3]{-64}$

Write each power as a radical:

a) $5^{\frac{2}{3}}$

b) $4^{\frac{1}{4}}$

Evaluate the following:

a) $(\frac{8}{27})^{\frac{1}{3}}$

b) $(\frac{9}{16})^{\frac{3}{2}}$

4.5 Negative Exponents and Reciprocals

Write using positive exponents:

a) $\frac{3^{-1}}{5}$

b) $\frac{3^{-1}}{5}$

Evaluate the following without a calculator:

a) $8^{-\frac{1}{3}}$

b) $16^{1.5}$

4.6 Applying the Exponent Laws

Simplify:

a) $(x^2)(x^3)$

b) $(x^5) \div (x^2)$

Simplify:

a) $(x^2)^3$

b) $(x^{-2})^{-3}$

Simplify: $(\frac{2b^3}{3c^3})^2$

Simplify: $(\frac{8x^{-2}y^3}{-12x^3y^{-1}})^{-1}$

Student Directions

4.4 Fractional Exponents and Radicals

Read Pages p. 222-226

Practice Questions

A	p.227 #3*, 4*, 5, 6, 7*	20 min.
B	p.227 #8-11 (all), 13, 14, 15, 16a, 19	25 min.

*use calculator

4.5 Negative Exponents and Reciprocals

Read Pages p. 229-232

Practice Questions

A	p.227 #3, 4*, 5, 6, 7, 8*	20 min.
B	p.227 #9aceg*, 10, 15, 16	20 min.

*use calculator

4.6 Applying the Exponent Laws

Read Pages p. 237-241

Practice Questions

A	p.241 #3-8 (all)	20 min.
B	p.242 #9, 10acef, 11, 13, 14, 15ac, 16, 17	25 min.
C	p.243 #21-23	10 min.

Am I ready to move on?

Read the Study Guide on pages 244 & 245.

Review (p.246-8)

Try the following review question

4.1	p.246 #1, 3*, 4, 5	
4.2	p.246 #6-9 (all)	
4.3	p.246 #11, 12, 14, 15ac	60 min.
4.4	p.247 #16, 17, 19*, 21, 22	
4.5	p.247 #24*, 25, 28, 29	
4.6	p.248 #30,32	

* use calculator

Optional Practice Test (p.249)	
p.249 #1-8 (all)	15 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 8 & 9 and review package with you when you come to get test permission.

LG TESTS HAVE 3 PARTS:

PART A: **MULTIPLE CHOICE**
PART B: **FREE RESPONSE**
PART C: **SOLVE & DESCRIBE**.

Math 10 Learning Guide 10 & 11

Relations & functions
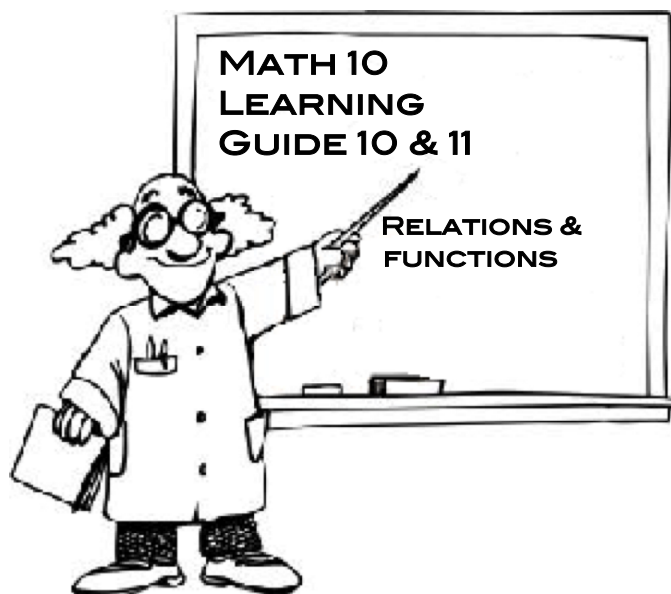
What Are These Guides About?

- A relation associates the elements of one set with the elements of another set.

- A function is a special type of relation for which each element of the first set is associated with a unique element of the second set.

- A linear function has a constant rate of change and its graph is a non-vertical straight line.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

Relation	Arrow Diagram
Function	Domain
Range	Function Notation
Rate of Change	Linear Function
Vertical Intercept	Horizontal Intercept

MA 10 Learning Guides

What Am Going to Learn in LG 10?

After this guide you should be able to do the following:

5.1 Representing Relations

Create an arrow diagram for the following graph:
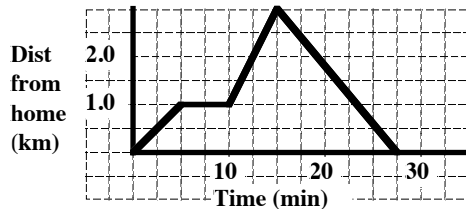
5.2 Properties of Functions

Write in function notation:
  C = 2.5x + 200

Write as an equation in two variables:
  D(t) = 5t − 2

Determine which of the following are functions:

  a)   (1, 2), (2, 4), (3, 6), (4, 8)
  b)   (1, 2), (1, 4), (1, 6), (1, 8)

What should I do?

5.1 Representing Relations

Read Pages p. 256-261

Practice Questions

A	p.262 #3, 4	10 min.
B	p.262 #5, 6ab, 7ab, 9, 10	15 min.
C	p.263 #13, 14	5 min.

Worksheet

Do the LG 10 **worksheet** on **graphing linear equations**	30 min.

5.2 Properties of Functions

Read Pages p. 264-270

Practice Questions

A	p.270 #4, 5, 6, 7	15 min.
B	p.262 #8, 9a, 10ab, 12, 14, 15, 16, 17, 19	25 min.
C	p.263 #20, 21	5 min.

Checkpoint 1 (p. 274-5)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

5.1	p.275 #1	15 min.
5.2	p.221 #2, 4	

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 10 Quiz.
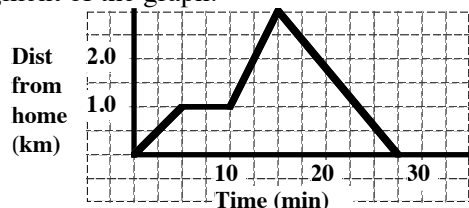
MA 10 Learning Guides

What Am Going to Learn in LG 11?

After this guide you should be able to do the following:
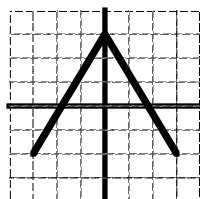
5.3 Interpreting and Sketching Graphs

Jaiden went for a run. Describe her run in each segment of the graph:

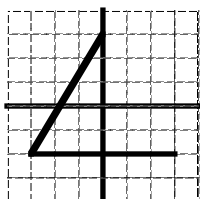

5.5 Graphs of Relations and Functions

Which are functions? State the domain and range.

a)   b)

5.6 Properties of Linear Relations

Which are functions? State the domain and range.

a)   b)

x	0	2	4	6	8
y	8	6	4	2	0

x	0	1	2	3	4
y	0	1	4	9	16

Create a table of values and graph $y = 2x + 3$

5.7 Interpreting Graphs of Linear Functions

Sketch a graph of the following linear function:
$$f(x) = 4x - 2$$

The graph shows the area covered by paint:
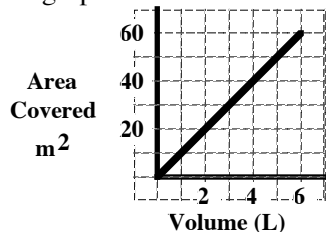
What is the rate of change?
What area will be covered by 8 L?

Am I ready to move on?

Read the Study Guide on pages 324 & 325.

Review (p.326-8)

Try the following review question

5.1	p.326 #1, 2	
5.2	p.326 #3-5 (all)	
5.3	p.326 #6a, 7	45 min.
5.5	p.327 #9-12 (all)	
5.6	p.327 #13, 14ab (i,iii, iv,v),	
5.7	p.328 #17, 18	

Optional Practice Test (p.249)	
p.329 #1-5 (all)	20 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 10 & 11 and review package with you when you come to get test permission.

Math 10 Learning Guide 12, 13 & 14
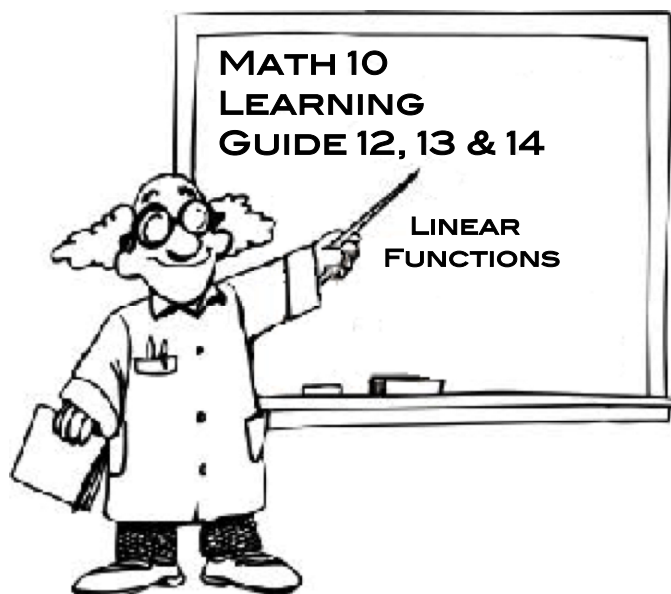
Linear Functions

What Are These Guides About?

- The graph of a linear function is a non-vertical straight line with a constant slope.

- Certain forms of the equation of a linear function identify the slope and y-intercept of the graph or the slope and the coordinates of a point on the graph.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

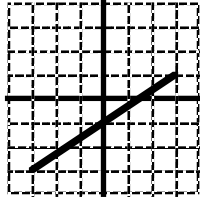|	
Slope	Rise
Run	Negative reciprocals
Slope-intercept form	Slope-point form
General form	

What Am Going to Learn in LG 12?

After this guide you should be able to do the following:

6.1 Slope of a Line

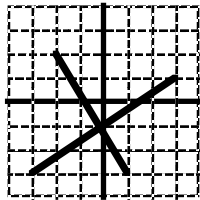Find the rise, run and the slope of the following:

Draw a line segment with a slope of $\frac{2}{3}$ that has one endpoint on the origin.

Determine the slope of the line that passes through the following points: (-2, 3) & (4, -1).

6.2 Slopes of Parallel and Perpendicular Lines

For the pair of lines at the right, determine whether the lines are parallel, perpendicular or neither.

Find a slope parallel to a line with slope $\frac{2}{3}$.

Find a slope perpendicular to a line with slope $\frac{2}{3}$.

Determine whether the slopes of the following pair of lines are parallel, perpendicular or neither:
A(-4, 1), B(-1, 5) & C(1, 1), B(5, -1)

What should I do?

6.1 Slope of a Line

Read Pages p. 332-339

Practice Questions

A	p.339 #4-9 (all)	15 min.
B	p.340 #11, 13a (i,ii,iii), 15, 17, 22, 23ac, 24, 26ab, 28	30 min.

6.2 Slopes of Parallel and Perpendicular Lines

Read Pages p. 344-348

Practice Questions

A	p.349 #3-6 (all)	10 min.
B	p.349 #8bcd, 9ab, 10, 11abd, 13, 16, 17	40 min.
C	p.351 #22, 23	10 min.

Checkpoint 1 (p. 352-3)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

5.1	p.353 #1-4 (all)	
5.2	p.353 #4-7 (all)	20 min.

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 12 Quiz.

MA 10 Learning Guides

What Am Going to Learn in LG 13?

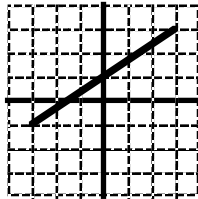After this guide you should be able to do the following:

6.4 Slope-Intercept Form of the Equation

Identify the slope and y-intercept of y = 2x + 3.

Write an equation with a slope of $\dfrac{-1}{3}$ and a y-intercept of -1.

Graph the following equation: $y = \dfrac{-2}{5}x + 3$

For the line in the diagram at the right, determine the slope, the y-intercept and the equation.
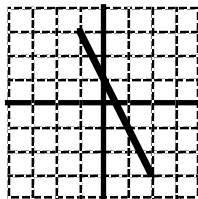

6.5 Slope-Point Form of the Equation

Identify the slope and a point on the line of:
$$y - 2 = 3(x + 3).$$

Write an equation with a slope of -3 and passing through the point of (-1, 5).

Describe the graph of the linear function the following equation: y + 2 = 2(x – 4)

Match the graph at the right with its equation:

y – 3 = 2(x + 1)
y + 3 = -2(x – 1)
y – 3 = -2(x + 1)

Student Directions

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 13 Quiz.

MA 10 Learning Guides

What Am Going to Learn in LG 14?

After this guide you should be able to do the following:

6.6 General Form of the Equation

Identify the form of the following linear equations:

a) $y = 2x + 4$
b) $y - 2 = 3(x - 1)$
c) $2x + 3y = 6$
d) $3x - 2y + 6 = 0$

Write the following equations in general form:
a) $y = 2x + 4$
b) $y - 2 = 3(x - 1)$
c) $2x + 3y = 6$

Find the x- and y-intercepts of $2x + 3y = 6$.

Write the following in slope-intercept form:
$2x - 5y = 10$

Graph the following and describe the method used:
$3x - 4y - 12 = 0$

Student Directions

6.6 General Form of the Equation

Read Pages p. 377-383

Practice Questions

A	p.384 #4-7 (all)	15 min.
B	p.384 #8, 9i-ab. 10abc. 11b, 12ab 13ab, 14ab, 16c, 18, 22, 23, 24	30 min.
C	p.385 #26	5 min.

Am I ready to move on?

Read the Study Guide on pages 386 & 387.

Review (p.388-390)

Try the following review question

6.1	p.388 #1-5 (all)	
6.2	p.388 #6-9 (all)	
6.4	p.389 #11-14 (all)	60 min.
6.5	p.389 #16, 17i,ii ab, 18, 19ab	
6.6	p.390 #21, 22, 25-28 (all)	

Optional Practice Test (p.391)	
p.391 #1-5 (all)	25 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 12, 13 & 14 and review package with you when you come to get test permission.

Math 10
Learning
Guide 15 & 16

Systems
of linear
equations
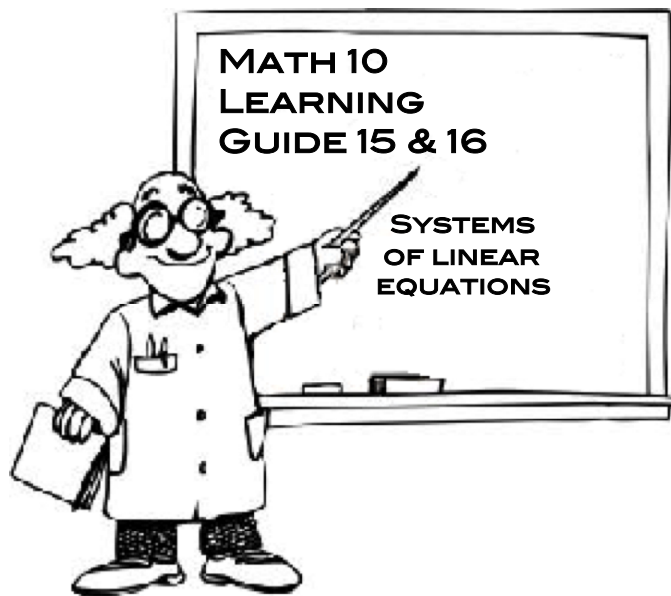
What Are These Guides About?

- A system of two linear equations is solved when the set of ordered pairs that satisfies both equations is determined.

- Multiplying or dividing the equations in a linear system by a non-zero number, or adding or subtracting the equations, produces an equivalent system.

- A system of two linear equations may have one solution, infinite solutions, or no solutions.

What New Words Should I Learn?

(These definitions should be added to your Math Journal Glossary)

System of linear equations	Linear system
Solving by substitution	Equivalent systems
Infinite	Coincident lines

MA 10 Learning Guides

What Am Going to Learn in LG 15?

After this guide you should be able to do the following:

7.1 Developing Systems of Linear Equations

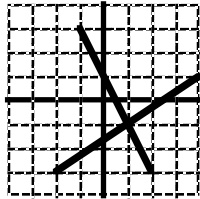What constitutes a linear system of equations?

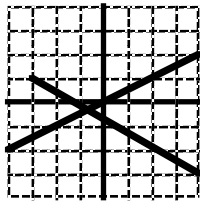Does the following linear system of equations have a solution of (-1, 2)?

$$3x + 2y = 6$$
$$2x - 4y = -12$$

7.2 Solving a System of Linear Equations Graphically

Determine the solution of the linear system at the right

Determine the approximate solution of the linear system at the right

Solve the following linear system by graphing:

$$x + y = 6$$
$$x - 2y = -3$$

What Should I Do?

7.1 Developing Systems of Linear Equations

Read Pages p. 394-400

Practice Questions

A	p.401 #4, 5	10 min.
B	p.11 #6, 7, 8, 10, 12, 13	20 min.

7.2 Solving a System of Linear Equations Graphically

Read Pages p. 403-408

Practice Questions

A	p.409 #3	5 min.
B	p.409 #4, 5(a – i, ii), 6, 7ab, 10-13 all (don't solve), 14,a, 16	30 min.
C	p.410 #17a 18	10 min.

Checkpoint 1 (p. 414-5)

Review the **Connections** and **Concept Development** sections and then try the following **Assess Your Understanding** questions:

7.1	p.415 #1-2	
7.3	p.415 #3, 5a, 6a	30 min.

Am I ready to move on?

Bring your marked guide and checkpoint work with you when you come to get permission for the LG 15 Quiz.

MA 10 Learning Guides

What Am Going to Learn in LG 16?

After this guide you should be able to do the following:

7.4 Using a Substitution Strategy to Solve a Systems

Use substitution to solve the following linear system.
$$y = 6 - x$$
$$2x - 4y = -6$$

Identify the two like terms and say how they are related.
$$3x + 4y = 12$$
$$4x + 2y = 6$$

Use substitution to solve the following linear system.
$$\frac{1}{2}x + \frac{2}{3}y = 1$$
$$\frac{1}{4}x - \frac{1}{3}y = \frac{5}{2}$$

7.5 Using a Elimination Strategy to Solve a System

Use elimination to solve the following linear system.
$$x - 4y = 1$$
$$x - 2y = -1$$

Use elimination to solve the following linear system.
$$6x - 2y = 29$$
$$4x + 3y = 1$$

Use elimination to solve the following linear system.
$$0.03x + 0.15y = 0.027$$
$$-0.05x - 0.5y = 0.05$$

7.6 Properties of Systems of Linear Equations

Determine the number of solutions to the linear system.
$$2x - 4y = 20$$
$$4x - 8y = 10$$

What should I do?

7.4 Using a Substitution Strategy to Solve a Systems

Read Pages p. 416-424

Practice Questions

A	p.425 #4, 5	20 min.
B	p.425 #6a,7a,8a,9a,11, 14, 15, 18, 19ac, 22a	45 min.
C	p.426 #27	5 min.

7.5 Using a Elimination Strategy to Solve a System

Read Pages p. 428-436

Practice Questions

A	p.437 #3, 4, 5	25 min.
B	p.437 #6cd, 7b, 8, 9, 12 ,13, 17, 19a20	30 min.

7.6 Properties of Systems of Linear Equations

Read Pages p. 442-447

Practice Questions

A	p.448 #4, 5, 6	15 min.
B	p.448 #7, 9, 10-12, 14, 15, 17-20	25 min.
C	p.449 #24a	10 min.

Am I ready to move on?

Read the Study Guide on pages 450 & 451.

Review (p.452)

Try the following review question

7.1	p.452 #2, 3	
7.2	p.452 #4-7 (all)	
7.4	p.453 #10, 11, 12a, 14	60 min.
7.5	p.454 #15, 16	
7.6	p.454 #18, 20, 21	

Optional Practice Test (p.455)

	p.455 #1- 6 (all)	30 min.

How Do I Show My Understanding?

Bring your marked guide work for LG 15 & 16 and review package with you when you come to get test permission.
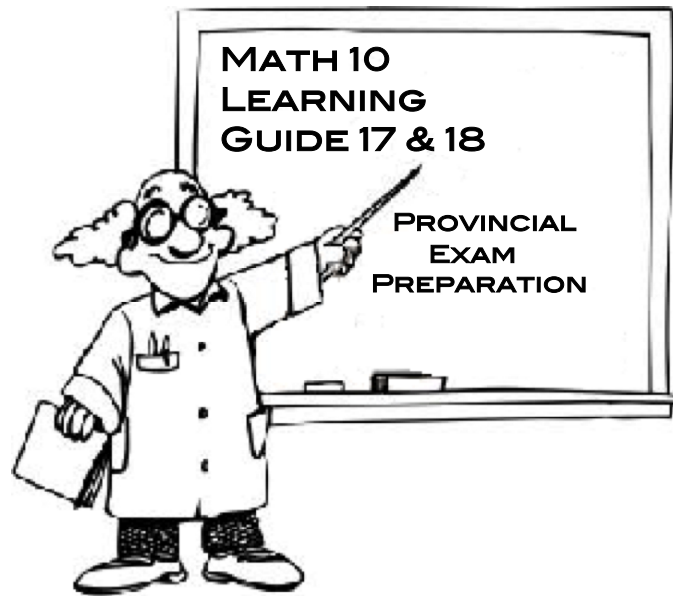
LG Tests have 3 parts:

Part a: Multiple choice
Part b: free response
Part c: solve & describe.

Math 10
Learning
Guide 17 & 18

Provincial
Exam
Preparation

What Are The Big Ideas?

- You will want to go back over the whole course to re-familiarize yourself with all the concepts covered.

- There is a Provincial exam at the end, which is worth 20% of your overall mark.

What Should I Do?

In-Class Review (See your teacher)

Do the **in-class review** for the Math 10 Provincial Exam **with a partner** and then hand in your marked review work for LG 17 to your teacher. The mark you receive for this package is you mark for LG 17. There is **no test** for LG 17. Ask your teacher if you want more review material.

How Do I Show My Understanding?

You will write the Math 10 Mock Exam on or before the date given to you by your teacher. Good luck! You mark on the Mock Exam is you mark for LG 18.

What Do I Do Next?

Make sure you go over you Mock Exam with your teacher.

Am I ready to move on?

If you wish to write a second (different) Mock Exam see you teacher for what extra preparation you will need to do and when you can write the second Mock Exam

Cumulative Review (p.458)

Try the following review question

1	P.458 #1, 2	
2	p.458 #3, 4	
3	p.458 #5, 6	
4	p.458 #7-9	90 min.
5	p.459 #10-16	
6	p.460 #17-24	
7	p.461 #25-31	