MATH 124

MATH FOR LIBERAL ARTS   * FALL, 2025 *

<mark>Mon, Sep 8</mark>

The first quiz will be drawn from ONLINE PRACTICE:

Problem Solving 1: #4, #7

Problem Solving 2: #7

Quiz #1 ✓

HW

A. **ONLINE PRACTICE:**

Problem Solving 1: #1, #2, #3, #4, #7, #9

Problem Solving 2: #6, #7

B. Research the first phrase of the Gettysburg Address

"Four score and seven years ago . . ."

and be ready to explain all of the math contained within it.

Review Quiz ✓

Review HW ✓

Quiz #2 ✓

HW

A. **ONLINE PRACTICE:**

      Problem Solving 1:   #2

      Problem Solving 2:   #1, #2, #6

      Number Theory: #1, #2

B. **Click: Sequences**

      Study pages 1–4

Review Quiz ✓

Review HW ✓

Quiz #3 ✓

HW

A. **Click:** **Sequences**

   Study pages 1–4

B. **ONLINE PRACTICE:**

   Problem Solving 1:   #1, #2, #3

   Problem Solving 2:   #1, #2, #3, #4, #6

   Number Theory   #1, #2, #3

Review Quiz ✓

Review HW ✓

Quiz #4 ✓

HW

A. 1. A pizza parlor offers **5** different toppings. How many ways can you choose your toppings, all the way from NONE to ALL?

2. The ice-cream store offers **10** toppings. How many ways can you choose your toppings?

3. The yogurt shop has **1** topping. How many ways can you choose your toppings?

4. A pizza parlor offers n different toppings. How many ways can you choose your toppings?

5. The ice-cream parlor offers **6** toppings. How many ways can you choose your toppings, assuming you have to choose at least 1 AND you cannot choose them all?

B. **ONLINE PRACTICE:**

Problem Solving 1:	#3, #7
Problem Solving 2:	#1, #2, #3, #4, #6
Number Theory	#3

Review Quiz ✓

Review HW ✓

Quiz #5 ✓

HW

A. **ONLINE PRACTICE:**

   Mortgages – #1, #2

B. Click the PDF: *Sequences* – Try them all.

C. **ONLINE PRACTICE:**

   Sequences –All

Quiz #6 ✓

HW

A. 1. The yogurt shop has **1** topping. How many ways can you choose your toppings?

2. The yogurt shop has **0** toppings. How many ways can you choose your toppings?

3. A pizza parlor offers **_n_** different toppings. How many ways can you choose your toppings, assuming you cannot choose none, AND you cannot choose all?

4. The ice-cream parlor offers **_n_** toppings. How many ways can you choose your toppings, assuming you cannot choose <u>exactly</u> 1?

B. **ONLINE PRACTICE:**

Mortgages – #1, #2

Computer Math – #1, #2, #3

C. **Click: _Sequences_**

D. **ONLINE PRACTICE:**

Sequences –All

> **Mortgages – #3**
>
> You should try this one on your own. To see the full solution, copy and paste the problem directly into Chrome (or any A.I. program) and see if you can follow the steps.

Quiz #7 ✓

HW

A. 1. The yogurt shop has **1** topping. How many ways can you choose your toppings?

2. The yogurt shop has **0** toppings. How many ways can you choose your toppings?

3. A pizza parlor offers **n** different toppings. How many ways can you choose your toppings, assuming you cannot choose none, AND you cannot choose all?

4. The ice-cream parlor offers **n** toppings. How many ways can you choose your toppings, assuming you cannot choose <u>exactly</u> 1?

B. **ONLINE PRACTICE:**

Mortgages – #1, #2, <u>#3</u>

Computer Math – #1, #2, #3

C. **Click:** *Sequences*

D. **ONLINE PRACTICE:**

Sequences –All

HW – Exactly the same as Sep 29.

Quiz #8 ✓

HW

ONLINE PRACTICE:

Sequences –All

Mortgages – #3

Computer Math – #4, #5, #6, #7

Click: *The Counting Principle*

ONLINE PRACTICE:

Computer Math – #8

Quiz #9 ✓

HW

ONLINE PRACTICE:

Mortgages – #3

Click: *The Counting Principle*

Click: *Series*

Problems 1–9, 16–22

Quiz #10 **E.C.** – try Problems 10–15 and "To ∞ and Beyond"

HW

Click: *Series*

Problems 10–15

Click: *Scientific Notation*

Problems 1, 2, 3

Online Practice

Advanced Counting – All

Click: *Variables and Identities*

Quiz #11 ✓

HW

Click: *Series*

Problems 10–15

Click: *Scientific Notation*

Study the examples prior to Problem 1

Problems 1, 2, 3, 4

Online Practice

Advanced Counting – All

Click: *Variables and Identities*

Quiz #12 ✓

Scientific Notation

Study Example 3

Problem 4

Permutations & Combinations

Statistics – The Mean and the Median

Problems 1–15

Quiz #13 ✓

Statistics – The Mean and the Median

Problems 16, 17

Sets

Problems 1–12

Wed, Oct 29

Quiz #14 ✓

Statistics – The Mean and the Median
ALL

Sets
ALL

Mon, Nov 3

Quiz #15 ✓

A. *Sets*

ALL

B. Today's Handout – [Pg 73 of the Text]

Answers:

1) 6	2) 4	3) 14	4) 12	5) 8
6) 15	7) 12	8) 16	9) 24	10) 0
11) 5	12) 8	13) 87	14) 63	15) 29
16) 31	17) 1	18) 10		

Wed, Nov 5

Quiz #16 ✓

   Click: *Venn Diagrams with Three Sets*

   Click: *Percents*

Mon, Nov 10

Quiz #17 ✓

   Click: *Marbles*

   Click: *Coins and Babies*

Wed, Nov 21

Quiz #18 ✓

   Click: *Rolling the Dice*
   Click: *Average Velocity*
   Click: *Constants – Finding the Numbers*

Quiz #19 ✓

A. **Click:** ***Rolling the Dice***

B. ***Online Practice*** – Find Two Numbers

[Some are hard – I advise you to practice!]

C. 1. Express 0.444 . . . as a fraction.

$$n = 0.444 \ldots$$

$$10n = 4.444 \ldots$$

Subtract the top equation from the bottom:

$$9n = 4 \implies n = \frac{4}{9}$$

2. Express 0.1717 . . . as a fraction.

$$n = 0.1717 \ldots$$

$$100n = 17.1717 \ldots$$

Subtract the top equation from the bottom:

$$99n = 17 \implies n = \frac{17}{99}$$

Prove that each decimal is **rational** by writing it as a fraction in reduced form:

3. $0.666 \ldots$ 4. $0.111 \ldots$ 5. $0.999 \ldots$

6. $0.4949 \ldots$ 7. $0.5454 \ldots$ 8. $0.0808 \ldots$

Quiz #20 ✓

A. **Click:** *Rolling the Dice*

B. *Online Practice* – Find Two Numbers
Note: The problems are a little harder now.

C. **Click:** *Big Numbers*

D. Express 0.7444 . . . as a fraction (That is, prove that it's a **rational number**):

$$n = 0.7444 \ldots$$

$$10n = 7.444 \ldots \qquad \text{[Equation 1]}$$

$$100n = 74.444 \ldots \qquad \text{[Equation 2]}$$

Subtract Equation 1 from Equation 2:

$$100n - 10n = 74.444 \ldots - 7.444 \ldots$$

$$\Rightarrow \quad 90n = 67$$

$$\Rightarrow \quad \frac{90n}{90} = \frac{67}{90}$$

$$\Rightarrow \quad \boldsymbol{n = \frac{67}{90}}$$

Prove that each decimal is **rational** by writing it as a fraction in reduced form (be sure you check with a calculator):

1. 0.7666 . . .   2. 0.8111 . . .   3. 0.1222 . . .

4. 0.4999 . . .   5. 0.5777 . . .   6. 0.0333 . . .

1. Find the **range** of each dataset:

   a. 17, 99, 44, 2, 8, 1

   b. 66, 77, 88, 99, 10, 109

   c. 56, 56, 99, 102, 1000

2. Find Q_1, Q_2, and Q_3 (as in **quartiles**) for each dataset:

   a. 1, 9, 12, 14, 88, 100, 121

   b. 65, 77, 2, 17, 99, 44, 30

   c. 45, 67, 78, 90, 100, 104

   d. 9, 8, 4, 5, 7, 3, 4

   e. 0, 2, 8, 10, 15, 16, 16, 18, 21

   f. 8, 4, 5, 1, 0, 9, 12, 7

3. a. What percent of the data lies between Q_1 and Q_2?

   b. What percent of the data lies between Q_1 and Q_3?

   c. Another term for Q_2 is the _____.

4. Recall that the **percentiles** are labeled P_1 through P_{99}.

   a. P_{25} is the same as which quartile?

   b. P_{75} is the same as which quartile?

   c. Another term for P_{50} is the _____.

   d. What percent of the data lies above P_{65}?

e. If you scored better than 80% of the people, what percentile are you at?

f. If 60% of the people scored better than you, what percentile are you at?

g. Explain why a test score of 72% on your history test does not necessarily mean that your score is at the 72nd percentile.

5. Find the **unit price** in each problem. Round everything to the nearest penny, and don't forget the units; for example, 2 lbs for $1.50 has a unit price of **$0.75/lb** (or **$0.75 per lb**):

$$\text{Unit Price} = \frac{\textbf{Price}}{\textbf{Quantity}}$$

a. 8 oz for $44

b. $14 for 28 lbs

c. 44 inches for $99

d. $23.50 for 10 yds

e. $24 for a 14-inch diameter pizza

f. $37 for a 20-inch diameter pizza

g. Which is the better deal (lower unit price), 10 oz for $4.50 OR 12 oz for $5.00?

h. Which is the better deal, 3 lbs for $17 OR 5 lbs for $28.50?

Click: *The Pythagorean Theorem*

Click: *The Money Table*