

Homework 2

Note that this homework involves watching and responding to a video clip from the IMAP CD. See the following page for instructions on accessing IMAP videos.

1. IMAP Video 02 – Dillon (10:00 minutes)

a. Before Watching the Video

- Open the Video Guide and go to Video Clip 2 (p. 6).
- Identify the problem type for the seven problems. You must give the complete name or acronym for each problem (refer to the charts if necessary).
- Note what it says about a problem being omitted from the video.
- Respond to the prompt under To Consider Before Viewing the Video Clip.

b. While Watching the Video

For each problem Dillon solves:

- Identify whether Dillon got the problem correct or incorrect.
- Identify what strategy type Dillon uses for each problem and explain how you know. (Direct Modeling, Counting, Derived Facts, or Algorithm.)
 - Note: one problem is completely unclear; you can write “unclear” for that one.

2. CGI Problem Types (see pages 3-4)

Identify the problem types of problems A-J (give the complete name or acronym).

- Note: you need to read the information about Low Income and Poor to understand some of the problems.
- Note: the wording of these problems is purposely more challenging than what I would use for young children.

3. Equal Groups problems

Make your own set of the three equal groups problems around a common theme.

- Label each problem.
- Write the corresponding number sentence for each problem type.
- Extra credit for using real data with a citation provided.

4. Short Response (about 150-200 words)

What do you think about the substance of problems A-J (do not worry about the difficulty of the numbers involved or the wording)? Do they belong in a K-8 classroom? Why or why not? Would you be likely to use these types of topics as a teacher? Why or why not?

5. Textbook Problem: Section 6.1 (p. 226): 1

Accessing files from the IMAP CD

Where to Find Files

When you insert the IMAP CD it should run automatically. If not, you want to open the program called "IMAPSelect Videos (the CD many need to install QuickTime first).

If you have a problem with the CD, please let me know immediately!

Guidelines for Watching Videos in 302A

Although you cannot truly separate the "mathematics content" from the "teaching of mathematics" (pedagogy), our class will focus more on the mathematics content side of things. This means that when viewing videos or looking at student work we will focus more on the mathematics used by the students or in the classroom and not on what can be learned about effective teaching (which you will focus on more in math methods in the College of Ed). However, it is important to remember that these two go hand in hand—*part of effective teaching involves thinking deeply about children's mathematics.*

Good teachers develop greater expertise at noticing important things as they watch classroom video clips like these. One important thing for our class is that expert teachers are better able to notice the specific mathematical strategies used by children and/or brought up in classroom discussions. This is one of the main things we will tend to watch for when we use videos in our class.

Considering the above, you may need to watch videos multiple times to catch the important ideas. You may also revisit some of these videos in math methods in the College of Education.

Before you start watching videos:

- Locate the "Video Guide" on the CD. We will use this throughout the semester so you should know how to find it. There are two ways to do this:
 - Open the CD and go to the following folder: "\Resource Files\PDF Documents\"
Then open "VideoGuide_Student.pdf"
- Read the following sections of the Video Guide
 - Beginning part (p. 2)
 - An Important Note About Professionalism and Respect (p. 2)
 - General Points (p. 3)

CGI Problem Types

The data in the problems below are from:

- * indicates the National Center for Children in Poverty (www.nccp.org), specifically <http://nccp.org/tools/demographics/>
- † indicates the US Census Bureau, specifically <http://www.census.gov/hhes/www/poverty/data/incpovhlth/2009/table4.pdf>
- ‡ indicates the US Debt Clock (<http://www.usdebtclock.org/>) and the U.S. Census Bureau (<http://www.census.gov/population/www/popclockus.html>)

I used their terms for race/ethnicity. The NCCP's definitions for low income and poor are below.

Low Income: Families and children are defined as low-income if the family income is less than twice the federal poverty threshold (see Poor). [note: so “low-income” includes “poor” families as well]

Poor: Families and children are defined as poor if family income is below the federal poverty threshold. The federal poverty level for a family of four with two children was \$22,050 in 2010.

- A. The U.S. national debt is currently about \$15 trillion (that's \$15,000,000,000,000). The U.S. population is currently about 312 million (that's 312,000,000). What is the average national debt per person?‡
- B. In 2008 there were about 2,754K poor people who worked full-time. In 2009 this decreased to 2,641K. How much did it decrease by?†
- C. In 2008 there were about 10,987K Hispanic people in poverty. In 2009 this increased by 1,363K. How many Hispanic people were in poverty in 2009?†
- D. In 2008 there were about 3,656K elderly people (65 or older) living in poverty. This decreased by 223K in 2009. How many elderly poor people were there in 2009?†
- E. In Arizona there are 469,553 Hispanic children living in low-income situations. This is 398,209 more than the number in Wisconsin. How many low-income Hispanic children are in Wisconsin?*
- F. The average national debt per person in the U.S. is about \$48,000. The total U.S. national debt is about \$15 trillion. About how many people are there in the U.S.?‡
- G. In Wisconsin 63% of Hispanic children are low-income. In Arizona it is 1% point higher. What percentage of Hispanic children are low-income in Arizona?*

- H. In Arizona there are 242,286 Hispanic children living in poverty. There are 227,267 Hispanic children who are considered low-income but not poor. How many low-income Hispanic children are there in Arizona?*
- I. The average national debt per person in the U.S. is about \$48,000. There are about 312 million people currently in the U.S. How large is the U.S. national debt?‡
- J. In 2009 there were about 3,433K elderly people (65 or older) living in poverty. This was down 223K from the previous year. How many elderly poor people were there in 2008?
†