Unit 7, Lesson 8: Writing and Graphing Inequalities
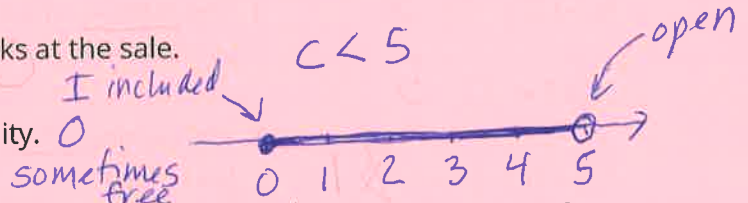
1. At the book sale, all books cost less than $5.

    a. What is the most expensive a book could be? 4.99

    b. Write an inequality to represent costs of books at the sale. $c < 5$ open

       I included ↓

    c. Draw a number line to represent the inequality. O
       sometimes free

    0 1 2 3 4 5

2. Kiran started his homework *before* 7:00 p.m. and finished his homework *after* 8:00 p.m. Let h represent the number of hours Kiran worked on his homework.

    Decide if each statement it is definitely true, definitely not true, or possibly true. Explain your reasoning.

    a. $h > 1$ yes   7-8 is one hour   definitely true

    b. $h > 2$ yes possibly, we don't know exactly when he started and stopped

    c. $h < 1$ no definitely not true if he started before 7 and worked until after 8 it couldn't be less than one hours

    d. $h < 2$ yes possible, could have worked more than one, but less than 2

3. Consider a rectangular prism with length 4 and width and height d.

    d - height

    4 ~~height~~ length

    d width
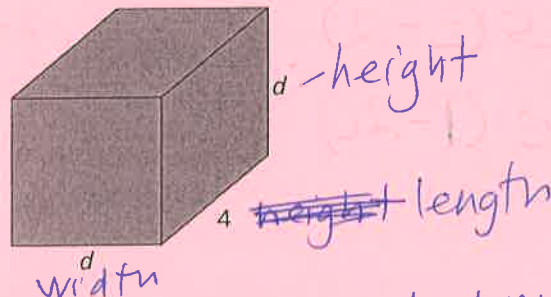
    a. Find an expression for the volume of the prism in terms of d. $h \times l \times w$
       $d \cdot 4 \cdot d$ or $4d^2$.

    b. Compute the volume of the prism when $d = 1$, when $d = 2$, and when $d = \frac{1}{2}$.

    $d = 1$

    $4 \cdot 1^2 = 4 un^3$

    $d = 2$

    $4 \cdot 2^2 =$

    $d = \frac{1}{2}$

    $4 \cdot 4 = 16 un^3$

    $\frac{4}{1} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{4}{4} = 1$

(from Unit 6, Lesson 14)

4. Match the mathematical statements with the statements written in English. All of these statements are true.

A. $|-12| > -15$ 3

B. $-15 < -12$ 5

C. $|-15| > |-12|$ ~~8~~ 1

D. $|-12| = 12$ 2

E. $12 > -12$ 6

F. $|12| = |-12|$ 4

1. The number -15 is further away from 0 than the number -12 on the number line. C

2. The number -12 is a distance of 12 units away from 0 on the number line. D

3. The distance between -12 and 0 on the number line is greater than -15. ~~C~~A

4. The numbers 12 and -12 are the same distance away from 0 on the number line. F

5. The number -15 is less than the number -12. B

6. The number 12 is greater than the number -12. E

(from Unit 7, Lesson 7)

5. Here are five sums. Use the distributive property to write each sum as a product with two factors. ( )

a. $2a + 7a$. $a(2+7)$

b. $5z - 10$ $5(z-2)$

c. $c - 2c^2$ $c(1-2c)$

d. $r + r + r + r$ $r(1+1+1+1)$
$r(4)$

e. $2x - \frac{1}{2}$ $\frac{1}{2}(4x-1)$

$2(x - \frac{1}{4})$

(from Unit 6, Lesson 11)