DAY 4

Performance Objectives:

➢ Given the equation of a line in slope-intercept, standard, or point-slope form, students will be able to recognize and/or solve for the slope of the line and recall that parallel lines have equal slopes 4 out of 5 times.

➢ Given a point that lies on the line and the slope of the line, students will be able to substitute the values appropriately into slope-intercept form and solve the resulting equation for the y-intercept 4 out of 5 times.

➢ Given the slope and the y-intercept, students will be able to substitute the values into slope-intercept form of the equation of a line 5 out of 5 times.

Resources or Materials Needed

Materials:

✓ Answers for the homework due today: *Homework-Day 3* (See Appendix Q)

✓ PowerPoint about writing an equation of a line parallel to another line (given in various forms): *Presentation-Day 4* (See Appendix R)

✓ Copies of exit ticket: *ExitTicket-Day 4* (See Appendix S)

✓ Key for exit ticket: *ExitTicket-Day 4 KEY* (See Appendix T)

✓ Copies of tonight's homework assignment: *Homework-Day 4* (See Appendix U)

Resources:

✓ Projector

✓ Computer with access to Microsoft Office: PowerPoint

- ✓ Computer with access to the internet

- ✓ Whiteboard with markers and eraser (for teacher)

- ✓ Individual whiteboard with marker & eraser (paper towel works) for each student

- ✓ Link to YouTube Video: https://www.youtube.com/watch?v=sJzGNGE5Gig

- ✓ Wi-Fi

- ✓ Each student will need an internet enabled device to use the Desmos Scientific Calculator. Link: https://www.desmos.com/scientific

Time: 45 minutes.

Step 1: Pre-Instructional Activities: As students come in, direct them to get a whiteboard, marker and eraser for later in the lesson, this direction could be projected on the board as students come in or the teacher could put the appropriate supplies out on student desks. Review the previous night's homework by projecting the answers and address any questions the students may have.

Step 2: Content Presentation: The YouTube video: *Find the equation of a line parallel using slope intercept* is a 3-minute single example video. This is going to be the first practice problem for the day. Watch the first 15 seconds or so when the presenter (visible on screen) reads the problem. (McLogan, 2011) Then pause the video and allow students to work out the problem on their own. Give the students a 2-3 minutes to work it out on either the little whiteboard or in their notebook. Instruct students that their final answer must be written on the whiteboard. Once time is up, or most students finish the problem, have them compare their final equation with a neighbor. If there are differences, have them try to find mistakes and work collaboratively to decide which answer is correct. Allow a few minutes for this to happen. Then, have one of the neighbors write their equation from their whiteboard on the whiteboard in the front of the

classroom. Finally, tell the students that we are going to watch the video to watch the answer be

worked out. Play the video.

The PowerPoint presentation has examples of problems to work through. Remind

students that they can use their Desmos Scientific Calculator as a tool to help them! Scattered in

between the parallel to a given line type questions there are review questions to make sure the

students are paying attention, reading/listening to directions. Students will be working the

problems in their notebook, and then just like with the video, they will write their final answer on

their whiteboard. As the instructor seems appropriate, and time allows, have students compare

their answers with a neighbor and analyze each other's work if they have different answers.

Students will take turns writing their answer and all supporting work on the whiteboard at the

front of the classroom.

Answers to examples in the PowerPoint presentation.

1.

$$\| m = -\frac{3}{2}$$

$$-5 = -\frac{3}{2}(2) + b$$

$$-5 = -3 + b$$

$$+3 \quad +3$$

$$-2 = b$$

$$y = -\frac{3}{2}x - 2$$

2.

$$\| m = -3$$

$$3 = -3(7) + b$$

$$3 = -21 + b$$

$$+21 \quad +21$$

$$24 = b$$

$$y = -3x + 24$$

3.

$$-5x + 4y = -3$$

$$+5x \qquad\qquad + 5x$$

$$4y = 5x - 3$$

$$\frac{4y}{4} = \frac{5x}{4} - \frac{3}{4}$$

$$y = \frac{5}{4}x - \frac{3}{4}$$

$$\| m = \frac{5}{4}$$

$$-7 = \frac{5}{4}(-16) + b$$
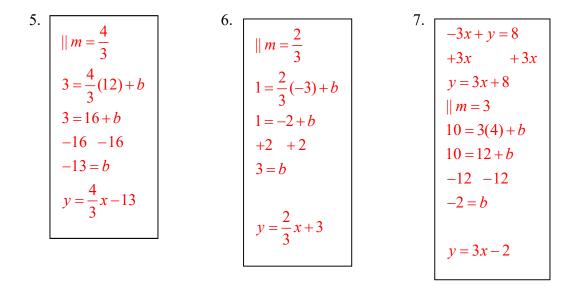
$$-7 = -20 + b$$

$$+20 \quad +20$$

$$13 = b$$

$$y = \frac{5}{4}x + 13$$

4.

$$\| m = 4$$

$$3 = 4(2) + b$$

$$3 = 8 + b$$

$$-8 \quad -8$$

$$-5 = b$$

$$y = 4x - 5$$

5.
$$\| m = \frac{4}{3}$$
$$3 = \frac{4}{3}(12) + b$$
$$3 = 16 + b$$
$$-16 \quad -16$$
$$-13 = b$$
$$y = \frac{4}{3}x - 13$$

6.
$$\| m = \frac{2}{3}$$
$$1 = \frac{2}{3}(-3) + b$$
$$1 = -2 + b$$
$$+2 \quad +2$$
$$3 = b$$

$$y = \frac{2}{3}x + 3$$

7.
$$-3x + y = 8$$
$$+3x \qquad + 3x$$
$$y = 3x + 8$$
$$\| m = 3$$
$$10 = 3(4) + b$$
$$10 = 12 + b$$
$$-12 \quad -12$$
$$-2 = b$$

$$y = 3x - 2$$

Step 3: Learner Participation: Students will be completing problems independently. Students will also come to board to write their answer to the problem (with all supporting work). Occasionally students may also compare their answers and possibly engage in peer error analysis.

Step 4: Assessment: Students will complete an Exit Ticket -Day 4 at the end of the class. Also, review problems at beginning of class, working examples during the main presentation of content, and tonight's independent practice (homework assignment). In addition to questions about this content on summative assessments.

Step 5: Follow-Through Activities: The next class, students will be completing a practice problem activity.