Lesson Notes and Resources Available on Teacher's Website

6.1 Integers (online textbook pgs. 248-253)	
A) Write the integer to represent the situation. **A ball falls 350 centimeters.**	B) Graph the integer and its opposite **-8**
C) The world's record for scuba diving is 318 meters below sea level. Write this as an integer.	**D) Describe and correct the error.** **The positive integers are 0, 1, 2, 3, . . .**
E) Choose a positive integer _____ a) Find the opposite of the integer _____ b) Find the opposite of the integer in part a _____ c) What can you conclude about the opposite of the opposite of the integer? Is this true for all integers?	F) Describe the meaning of **- (- (- 6))**.
G) The highest temperature in February is 25°F. The lowest temperature in February is the opposite of the highest temperature. Graph both temperatures.	H) A stock market gains 83 points. The next day, the stock market loses 47 points. Write each separate amount as an integer.

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6.2 Comparing and Ordering Integers (online textbook pgs. 254-259)	
A) Compare (< or >). **-2 _____ 0**	B) Compare (< or >). **-7 _____ -8**
C) Order the integers from least to greatest. **10, -10, 30, -30, -50**	D) A number is between -2 and -10. What is the least possible integer value of this number? What is the greatest possible integer value of this number?
E) Point A is on a number line halfway between -17 and 5. Point B is halfway between point A and 0. What integer does point B represent?	F) Which list shows temperatures above and below freezing in order from the lowest to the highest? **A. 11°C, 201°C, -12°C, -10°C, -111°C** **B. -111°C, 201°C, 11°C, -10°C, -12°C** **C. -12°C, -10°C, -111°C, 201°C, 11°C** **D. -111°C, -12°C, -10°C, 11°C, 201°C**
G) Quincy and Ray are playing a game. The person with the greater score wins. Quincy has a score of -70, and Ray has a score of -60. Which statement best explains who is winning and how many points from 0 that person is? A. Ray is winning and is 60 points from 0. B. Ray is winning and is 70 points from 0. C. Quincy is winning and is 60 points from 0. D. Ray is winning and is 70 points from 0.	H) The freezing temperature of nitrogen is -210° C, and the freezing temperature of oxygen is -223° C. Which temperature is colder? How do you know?

6.3 Fractions and Decimals on the Number Line (online textbook pgs. 260-265)	
A) Compare (< or >). $$- 0.12 \ \_\_\_\_\_ \ - 0.05$$	B) Compare (< or >). $$- 4.6 \ \_\_\_\_\_ \ - 4.8$$
C) Compare (< or >). $$-\frac{1}{2} \ \_\_\_\_\_ \ -\frac{1}{6}$$	D) Compare (< or >). $$- 1\frac{5}{6} \ \_\_\_\_\_ \ - 1\frac{3}{4}$$

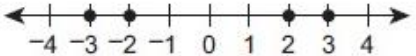|	
E) The price of a gallon of gasoline **decreased** by **$0.04**. Which number line represents this change in price? A. B. C. D.	F) Which of the following lists is in order from greatest to least? A. $-2\frac{1}{5}, \ -1\frac{2}{3}, \ -1\frac{3}{5}, \ -\frac{1}{2}, \ -\frac{1}{3}$ B. $-\frac{1}{3}, \ -\frac{1}{2}, \ -1\frac{3}{5}, \ -1\frac{2}{3}, \ -2\frac{1}{5}$ C. $-2\frac{1}{5}, \ -1\frac{3}{5}, \ -1\frac{2}{3}, \ -\frac{1}{2}, \ -\frac{1}{3}$ D. $-\frac{1}{3}, \ -\frac{1}{2}, \ -1\frac{2}{3}, \ -1\frac{3}{5}, \ -2\frac{1}{5}$
G) Which of the following statements is **false**? A. $-1\frac{3}{4} < -1\frac{3}{5}$ B. $-2\frac{1}{2} > -2\frac{2}{3}$ C. $-3\frac{3}{8} > -3\frac{1}{3}$ D. $-4\frac{1}{4} < -4\frac{1}{6}$ How do you know?	H) In rough water, a small sand dollar burrows $-\frac{1}{2}$ centimeter into the sand. A larger sand dollar burrows **-1**$\frac{1}{4}$ centimeters into the sand. Which sand dollar burrowed farther from the surface of the sand? How do you know?
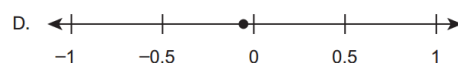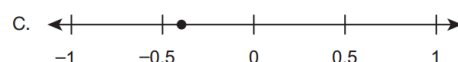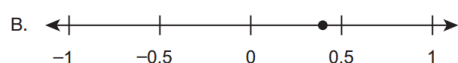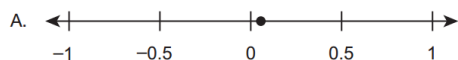
6.4 Absolute Value (online textbook pgs. 268-273)	
A) Find the absolute value. $$|-8.35|$$	B) Compare (< or >). $$|-6.8| \_\_\_\_\_ |5.375|$$
C) Compare (< or >). $$|-\frac{3}{4}| \_\_\_\_\_ -|\frac{2}{5}|$$	D) Order the values from least to greatest. $$|-3|, \quad |5|, \quad -3, \quad -4, \quad |-4|$$
E) Four points are graphed on the number line. Which inequality represents the number line? A. $-3 < |-3| < -2 < |-2|$ B. $|-2| < -2 < |-3| < -3$ C. $-(-3) < -(-2) < -|2| < -|3|$ D. $-|3| < -|2| < -(-2) < -(-3)$	F) Three scientists explore a cave. Order the scientists from farthest from the surface to closest to the surface. **Scientist A: -48 ft.** **Scientist B: -62 ft.** **Scientist C: -53 ft.**
G) An office worker is on the second floor of a building, **30 feet above** the ground floor. A custodial worker is on one of the underground floors, **45 feet below** ground level. Write an integer that represents the custodial worker's position relative to the office worker's position. Which worker is farther from the ground floor? Explain your reasoning.	H) Which of the following lists is in order from **least** to **greatest**? **A. 1, -3, 5, |6|, |-9|** **B. -3, 1, 5, |6|, |-9|** **C. |6|, -3, 1, 5, |-9|** **D. |-9|, -3, 1, 5, |6|**

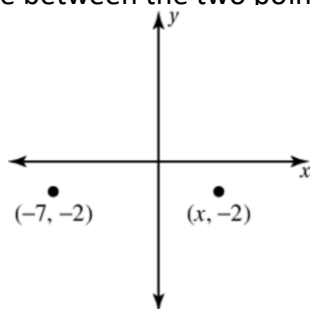| 6.5 Coordinate Plane (online textbook pgs. 274-281)	
A) Describe and correct the error. **To plot (4,5), start at (0,0) and move 5 units right and 4 units up.**	B) Describe and correct the error. **To plot (-6,3), start at (0,0) and move 6 units right and 3 units down.**
C) *Use the coordinate grid on page 280 (#31)* The coordinates of three vertices of a square are shown in the figure. What are the coordinates of the fourth vertex? Describe this points location.	D) *Use the line graph on page 280 (#35).* Estimate the population in 2012. Between which two years did the population increase the most?

E-F) On the coordinate plane, *J* shows Jake's starting point and *L* shows Lisa's starting point.

Key
☐ = 2 km
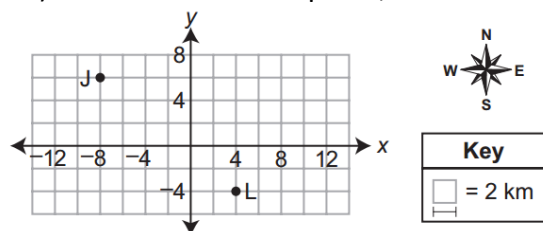
- Jake walks from his starting location for the same amount of time as Lisa.
- Jake walks east at a rate of 4 km per hour, and Lisa walks west at a rate of 3 km per hour.
- Jake stops walking when he reaches the point directly north of point L.

Which ordered pair describes the location of Lisa when she stops?
A. (-12, -4)
B. (-8, -4)
C. (-5, -4)
D. (-3, -4)

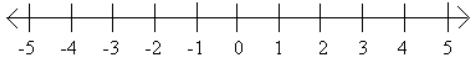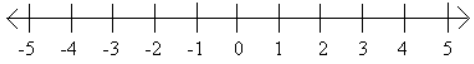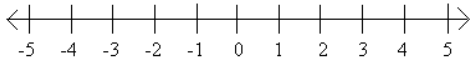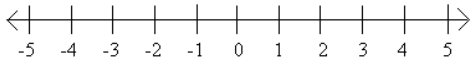| G) The distance between the two points graphed below is 11.	H) Describe the possible location of the point (x,y).
 $(-7, -2)$ $(x, -2)$ What's the value of x? How do you know?	**x > 0, y < 0** How do you know?

6.5 Extension – Reflecting Points in Coordinate Plane (online textbook pgs. 282-283)	
A) Reflect the point in the x-axis and the y-axis. **(-4, 4)** Reflected in x-axis _____, in y-axis _____	B) Reflect the point in the x-axis and the y-axis. **(-5, -6)** Reflected in x-axis _____, in y-axis _____
C) Reflect the point in x-axis followed by y-axis. **(4, 5)**	D) Reflect the point in x-axis followed by y-axis. **(4, -7)**
E) A point is reflected in the x-axis. The reflected point is **(3, -9)**. What is the original point? What is the distance between points?	F) The vertices of a triangle are **(-1, 3)**, **(-5, 3)**, and **(-5, 7)**. How would you reflect the triangle in the x-axis? Give the coordinates. How would you reflect the triangle in the y-axis? Give the coordinates.
G) A point is reflected in the y-axis. The reflected point is **(5.75, 0)**. What is the original point? What is the distance between the points?	H) Which of the following points is the reflection of **(8, -5)** in the y-axis? A. (8, 5) B. (-5, 8) C. (-8, 5) D. (-8, -5)

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7.5 – Writing and Graphing Inequalities (online textbook pgs. 324-331)	
A) Write the word sentence as an inequality. **A number _z_ is fewer than $\frac{3}{4}$.**	B) Write the word sentence as an inequality. **One plus a number _y_ is no more than -13.**
C) Tell whether the given value is a solution to the inequality. **3_z_ > 6; _z_ = 3**	D) Graph the inequality on a number line. **_x_ ≤ -2**
E) Graph the inequality **x < 4**. -5 -4 -3 -2 -1 0 1 2 3 4 5 Graph the inequality **x > 4**. -5 -4 -3 -2 -1 0 1 2 3 4 5 Graph the inequality **x ≤ 4**. -5 -4 -3 -2 -1 0 1 2 3 4 5 Graph the inequality **x ≥ 4**. -5 -4 -3 -2 -1 0 1 2 3 4 5	F) Write and graph an inequality for the situation. **A group must include at least 10 people.**
G) Which inequality represents the word sentence: **Four plus a number _k_ is no less than 12.** **A. 4_k_ > 12** **B. 4_k_ ≥ 12** **C. 4 + _k_ > 12** **D. 4 + _k_ ≥ 12** How do you know?	H) Tell whether the given value is a solution of the inequality. $\frac{b}{2} \geq 6$; b = 10

7.6 Solving Inequalities for Addition or Subtraction (online textbook pgs. 332-337)	
A) Solve and graph the solution. $$18 > 12 + x$$	B) Solve and graph the solution. $$7.2 \geq x + 4.2$$
C) Solve and graph the solution. $$\frac{3}{4} \leq \frac{1}{2} + n$$	D) Solve and graph the solution. $$y - 21 < 85$$
E) Sam wants to buy a game that costs more than **$82.00**. He has already saved **$29.75**, and his grandma gave him **$20.00** for the game. Which inequality describes the amount of money (m), in dollars, that Sam still needs to save? **A. $m > 32.25$** **B. $m > 46.75$** **C. $m > 52.25$** **D. $m > 84.00$**	F) The high score for a game is 26,290. Your current score is 24,830. Each rabbit you catch is worth 1 point. You also get a 1000-point bonus for reaching 25,000 points. Write and solve an inequality to represent the number of rabbits you must catch to earn a new high score.
G) **Your carry-on bag currently weighs 27 pounds, and can weigh at most 40 pounds**. Write and solve an inequality to represent how much more weight you can add to the bag and still meet the requirement.	H) The possible values of x are given by $x - 3 \geq 2$. Solve the inequality. What is the least possible value of x?

7.7 Solving Inequalities for Multiplication or Division (online textbook pgs. 338-343)	
A) Solve and graph the solution. $6x < 90$	B) Solve and graph the solution. $\frac{5}{9}x \le 45$
C) Solve and graph the solution. $\frac{m}{8} < 12.5$	D) Write the word sentence as an inequality. Then solve the inequality. **A number *t* divided by 32 is at most 4.25.**
E) Graph the numbers that are solutions to both inequalities. **x + 7 > 9 and 8x ≤ 64**	F) Explain how you know that **7x < 7x** has no solution.
G) Graph the numbers that are solutions to both inequalities. **x − 3 ≤ 8** and **6x > 60**	H) A one-way bus ride costs **$1.75**. A 30-day bus pass costs **$42**. Write and solve an inequality to find the least number of one-way rides (r) you must take for the 30-day pass to be a better deal.