

## Reading Responses and Reflection 1 – Due 6pm Sun. Apr. 6

### Precalculus Reading

1. a) Assume that the variable  $w$  is a function of  $t$  and that  $w = a*t + c$ . What symbol represents the input variable? Choose one.
1. b) What symbol represents the output variable? Choose one.
1. c) What symbol represents the vertical intercept? Choose one.
1. d) What symbol represents the slope? Choose one.
2. a) Consider the graph associated with the function  $f(x) = m*x + b$ . If you increase the parameter  $b$ , what happens to the graph?
- (a) makes the graph more steep
- (b) makes the graph less steep
- (c) shifts the vertical intercept up
- (d) shifts the vertical intercept down
2. b) Consider the graph associated with the function  $f(x) = m*x + b$ . Assume the parameter  $m$  is positive. If you change the parameter  $m$  to a smaller positive number, what happens to the graph?
- (a) makes the graph more steep
- (b) makes the graph less steep
- (c) shifts the vertical intercept up
- (d) shifts the vertical intercept down.
3. a) Suppose you have the line  $y = -3x + 6$ . Write down the equation of any other line parallel to this line.
3. b) Suppose you have the line  $y = -3x + 6$ . Write down the equation of any line perpendicular to this line.
4. a) In the equation  $Y(m) = 20 + 0.59*m$  of Example 2 p128 of the pre-calculus text, consider the number 20. What does it represent in the “real” world and what are its units?
4. b) In the equation  $Y(m) = 20 + 0.59*m$  of Example 2 p128 of the pre-calculus text, what does the number 20 correspond to graphically?
4. c) In the equation  $Y(m) = 20 + 0.59*m$  of Example 2 p128 of the pre-calculus text, consider the number 0.59. What does it represent in the “real” world and what are its units?
4. d) In the equation  $Y(m) = 20 + 0.59*m$  of Example 2 p128 of the pre-calculus text, what does the number 0.59 correspond to graphically?
5. If the lines  $g(x)$  and  $h(x)$  intersect, explain as briefly as you can how to find the point of intersection.

### Physics Reading

1. Velocity is the change in position over time. Using similar language, what is acceleration?
2. a) If a position vs. time graph is linear, the velocity is the:
- vertical intercept
- slope
- magnitude of the slope
- area under the graph
2. b) If a velocity vs. time graph is linear, the acceleration is the:
- vertical intercept
- slope
- magnitude of the slope
- area under the graph

3. a) If acceleration is in the same direction as velocity, the speed:

- decreases
- remains the same
- increases
- not enough information

3. b) If acceleration is in the opposite direction as velocity, the speed:

- decreases
- remains the same
- increases
- not enough information

4. An object moving in a straight line is at  $x = 9$  m at  $t = 1$  s and at  $x = 5$  m at  $t = 3$  s. What is the object's (average) velocity? Make sure to include units.

5. a) An object moves with (average) acceleration  $5 \text{ m/s}^2$  for 2 seconds in a straight line. What is the object's change in velocity at the end of the 2 seconds?

- 0 m/s
- $2/5$  m/s
- $5/2$  m/s
- 10 m/s
- not enough information

5. b) An object moves with (average) acceleration  $5 \text{ m/s}^2$  for 2 seconds in a straight line. How fast is the object moving at the end of the 2 seconds?

- 0 m/s
- $2/5$  m/s
- $5/2$  m/s
- 10 m/s
- not enough information

### Reflections

What would you like us to spend class time on from the precalculus readings?

What would you like us to spend class time on from the physics readings?

What material from the past week are you still having difficulty with?

Prompt 1: For you personally, what do you think becoming more mathematically capable and confident will look like?

Prompt 2: For you personally, what do you think becoming more scientifically capable and confident will look like?