Do NOT write your name anywhere. (Canvas will tell me who turned in the exam.) Take pictures of your answers and use your own software or https://pdfcandy.com/ to create a PDF for each answer which requires an upload. If it is large, resize it to A4. Upload that to Canvas. Upload each answer as a separate file with that question. Failure to follow directions will cost you one point. People with Apple products may need to us CamScanner app.

You are not allowed to use your books, notes, the internet, or other people when taking this test. You can use the internet to access Canvas and to convert your answers to PDF files. Nothing else.

If you run out of time or lose your internet connection, you can do a second submission. You do NOT have to redo the questions you already did. I will be able to see every submission. If you have problems, you can always contact me via Zoom or e-mail. If you use Zoom, open it in a new tab or window.

Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 140 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I have it set up to only give you an hour and a half.

Show all work on all questions.

1) (8 points) Find the distance between (-2, 5) and (3, -7) and find the midpoint between them.

2) (8 points) For EITHER the set in Part A OR the set in Part B, simplify the expression and then plot it on the number line.
A) $\{x|\ x \geq -2\} \cap (-3, 7]$
B) $\{x|\ x \text{ is an odd integer}\} \cap (3, 10]$

3) (8 points) For EITHER the set in Part A OR the set in Part B, simplify the expression and then plot it on the number line.
A) $\{x|\ 5 > x > -2\} \cup [-3, 3]$
B) $\{x|\ x < 5, x \in \mathbb{N}\} \cup [-3, 3]$

4) (8 points) Write EITHER the sentence in Part A OR the sentence in Part B in the roster method or the set-builder method. Briefly state what you did.
A) The set of whole numbers which are evenly divisible by 3.
B) The set of integers which are perfect squares.

5) (12 points) Plot EITHER the area in Part A OR the area in Part B.
A) The set of points (x, y) where $x > -2$ and $y \geq -5$
B) The set of points (x, y) where $-3 \leq y < 3$

6) (12 points) For EITHER Part A OR Part B, determine if the relationship is a function. Briefly explain your logic.

$$A)\ Y = \begin{cases} x & x \leq 4 \\ x - 3 & 4 \leq x \leq 8 \\ x & x \geq 8 \end{cases}$$

B) $X + Y^2 = 4$

7) (16 points) Answer EITHER Part A OR Part B.
A) Suppose that every ticket to the general admission concert costs $15. Because of COVID-19, the venue is not allowed to have more than 40 people in attendance. Write the function for revenue, R, as a function of the number of tickets, T. What are the applied domain and range of this function? Briefly explain how you reached that conclusion.
B) What are the domain and range of the function below. Make sure you explain how you found them

and show all work. $Y = F(X) = \dfrac{1}{\sqrt{X-5}}$

8) (28 points) For EITHER the relationship in Part A OR the relationship in Part B, find the values for Y, when X = -2, -1, 0, 1, and 2. Plot those five points and draw a smooth curve connecting them. Do the test I specify. Find both the X-intercept and the Y-intercept.
A) $Y^2 + X^2 = 4$ Test for X-axis symmetry.
B) $Y + X^2 = 4$ Test for Y-axis symmetry.