2.D

Evaluation the following inputs:

$$h(t) = \begin{cases} 2t, & if\ t < -2 \\ t-2, & if\ -2 \le t \le 2 \\ -2, & if\ t > 2 \end{cases}$$;Find h(-7), h(-1), h(-2), h(4), h(8)

h(-7) use first equation since $-7 < -2$

$= 2(-7) = \boxed{-14}$

h(-1) use second equation since $-2 \le -1 \le 2$

$= t-2 = (-1)-2 = \boxed{-3}$

h(-2) = t-2 since $-2 \le -2$ ← equal to

$= -2-2 = \boxed{-4}$

h(4) = $\boxed{-2}$ ← no x to replace with 4

↖ horizontal line $y=-2$

h(8) = $\boxed{-2}$ ← no x to replace with 8

↖ horizontal line at $y=-2$

Graph the following functions

$$f(x) = \begin{cases} x+1, & \text{for } x \le -3, \\ -1, & \text{for } -3 < x < 4, \\ \frac{1}{2}x, & \text{for } x \ge 4 \end{cases}$$

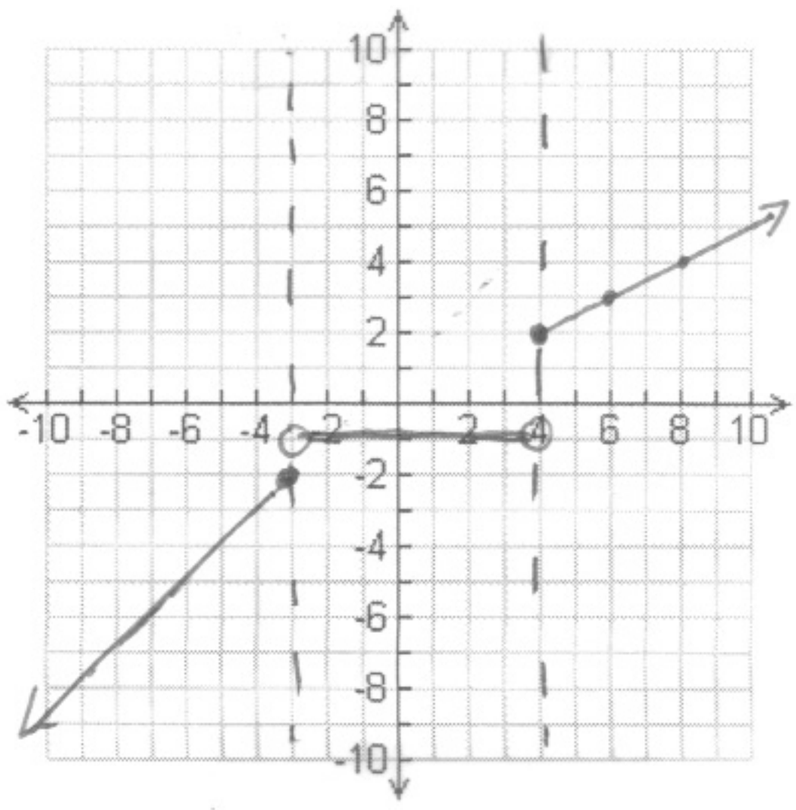
a) "walls" at $x=-3$

$x=4$

b) $x+1$ ↙↗ closed dot $\le$

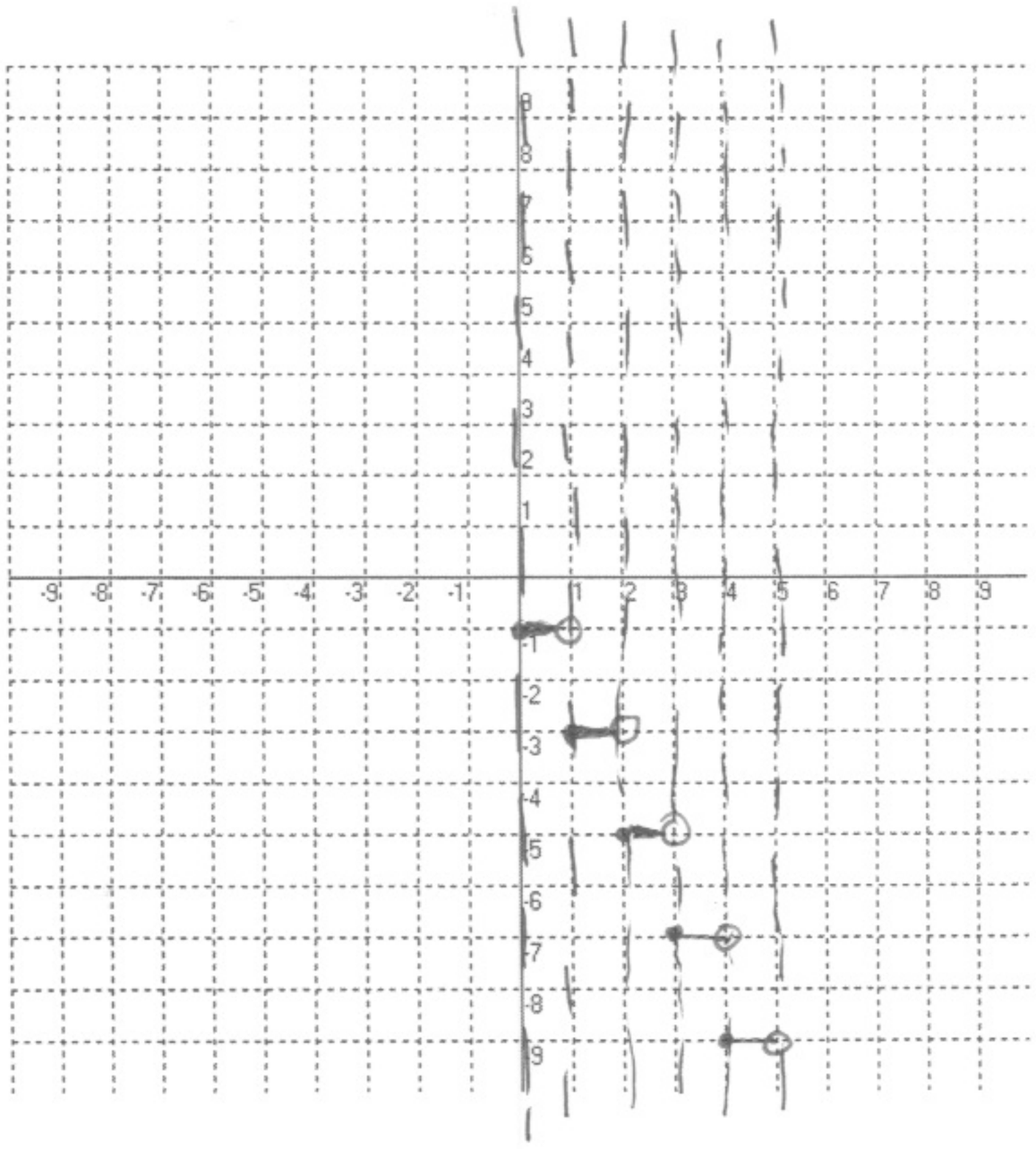
-1 ⟷ $<$ $<$ ← open dot

$\frac{1}{2}x$ ↙↗ $x \ge 4$ ← closed dot



(2D) cont'd

$$f(x) = \begin{cases} -1, & \text{if } 0 \le x < 1 \\ -3, & \text{if } 1 \le x < 2 \\ -5, & \text{if } 2 \le x < 3 \\ -7, & \text{if } 3 \le x < 4 \\ -9, & \text{if } 4 \le x < 5 \end{cases}$$



the graphs are all horizontal lines

a) Draw wally each graph of the horizontal line has a closed dot on the left ($\le$) and open dot on the right ($<$)

1B

1B I can calculate measures of central tendency and dispersion of a data set and use the mean and standard deviation to sketch and label a normal curve, when appropriate, and interpret/apply the "68-95-99.7 rule"

↑ go one more std dev to get 100%

2) At a high school, classes begin at 7:30. The average arrival time is 7:25 with a standard deviation of 2.5 minutes.

a) On an ordinary day, what percent of the students are late?

$100 - (50 + 34 + 13.5) \approx 2.5\%$ ← not . 2.35 still a little more after 99.7

b) What percent of the students arrive before 7:20?

$2.5\% = 0.15 + 2.35$

c) Gahr High School's student population is 1,900. How many students arrive between 7:20 and 7:30?

95% of 1900

$1900 \times 0.95 = 1805$ students

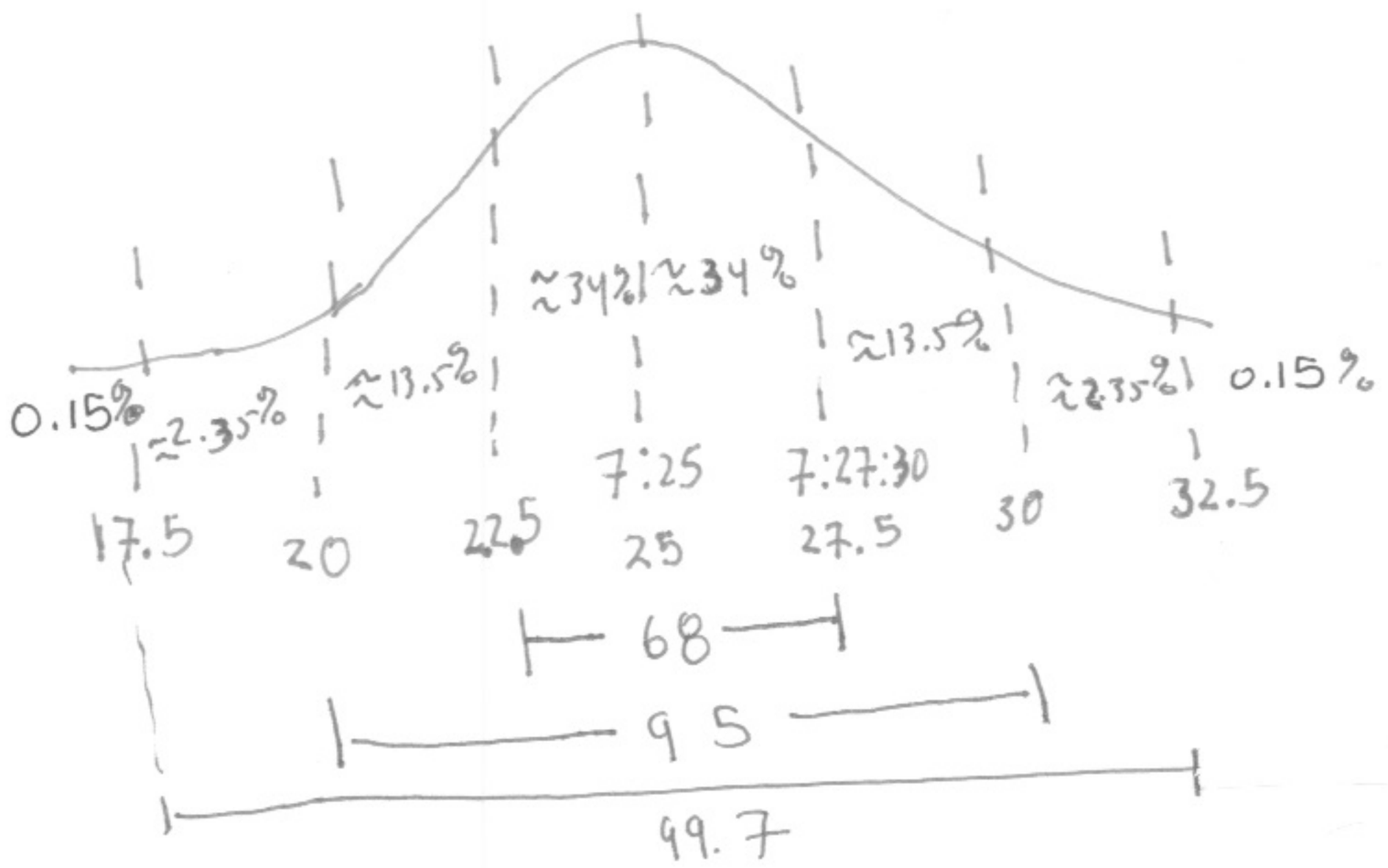
d) How many students arrive by 7:25?

50% of 1900 = 950 students

e) 68% of the students at Gahr arrive between what two times?

7:22 and 30sec and 7:27 and 30sec.

f) 57 students arrive before or after what two times?



f) a) $\frac{57}{1900} \approx 0.03 \approx 3\%$ approx before 7:20 or after 7:30

b) using z-score closest is 0.0301 z-score of −1.88 std dev from mean $1.88 \times 2.5 = 4.7$ min. or 4 min 42 sec

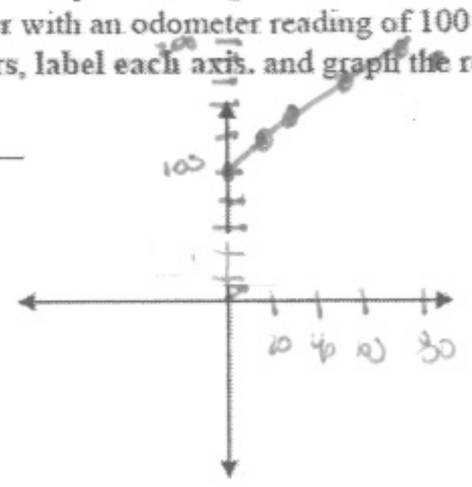
after 7:29 and 42 sec

before 7:20 and 18 sec

Unit 2

Suppose your parents have restricted your driving to less than 80 miles a day or lose your car privileges. One morning you start driving the car with an odometer reading of 100 and drive as much you are allowed. Complete a table of ordered pairs, label each axis. and graph the relation with these restrictions.

Distance	Odometer
0	100
20	120
40	140
60	160
80	180



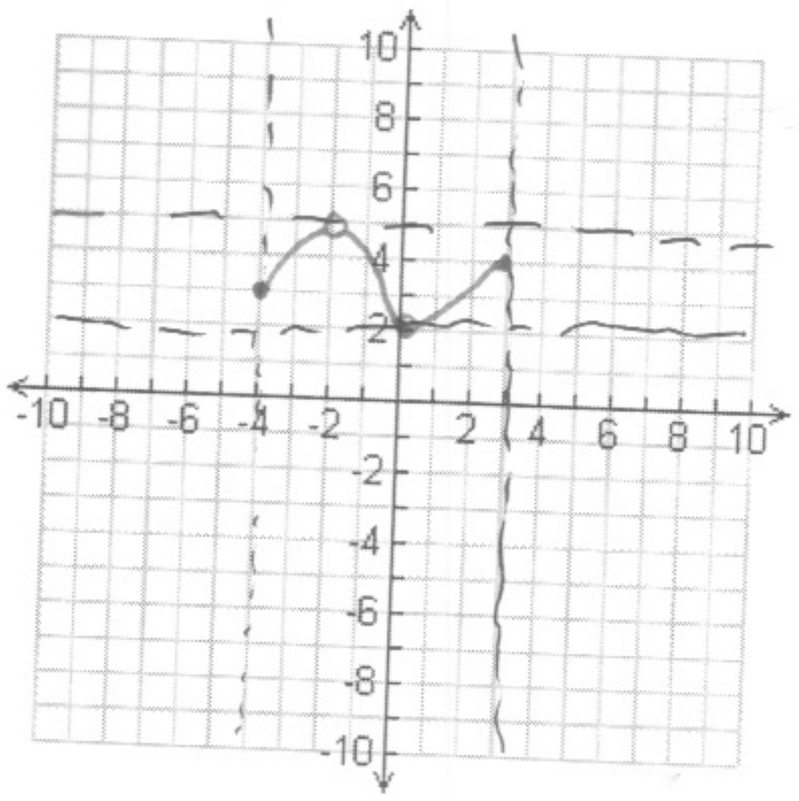
Unit 2

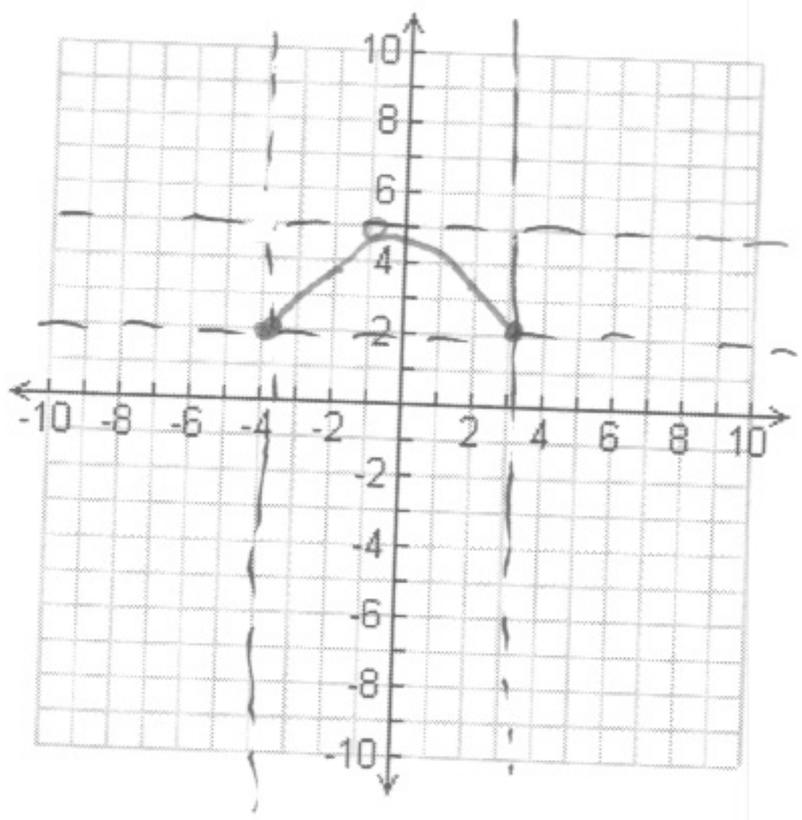
1) Using domain and range given, sketch a graph (There are many possible solutions)

D: $\{x: -4 \le x \le 3\}$ R: $\{y: [2, 5)\}$ D: $\{x: -4 \le x \le 3\}$ R: $\{y: [2, 5)\}$

Draw "box"

remember to use dotted lines and/or open closed dots.

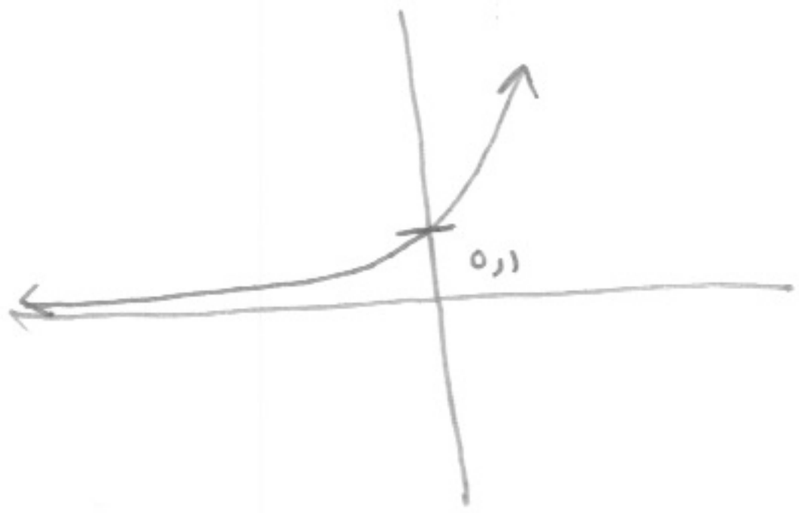




2) Find a graph that would fit the following description and **Explain your choice.**

x-intercept = Does not Exist and y-intercept = 1

End Behavior: $x \to \infty^+ \; then \; y \to \infty^+ \; and \; x \to \infty^- \; then \; y \to 0$



Exponential Function with asymptote at y=0

Unit 1

ACT versus SAT You are registering for classes during your first semester at college. The advisor asks to see either your ACT math score or your SAT math score so she can enroll you in the appropriate math class. You scored 25 on the ACT math portion and 650 on the SAT math score. In the math portion of the ACT exam, the mean score is 20.7, with a standard deviation of 5, while the SAT math portion has a mean score of 514, with a standard deviation of 113. Which test score should you provide to the advisor, assuming that you wish to enroll in the highest-level course possible? Why?

SAT

650

since scores don't fall nicely on whole standard deviations, need to use z-score

ACT

$z = \frac{25 - 20.7}{5} = 0.86$ ← better than 80.51% of students relatively scores

SAT

$z = \frac{650 - 514}{113} = 1.20$ ← better than 88.49% of student scores. relatively.

SAT z-score shows a bigger percentage, My SAT is better than students by a bigger percentage than my ACT score.