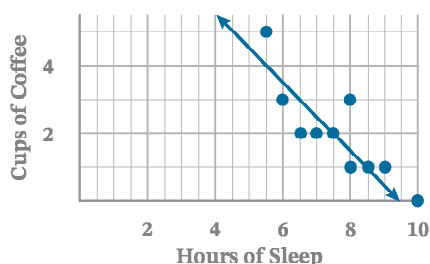


Midterm Exam

1A)



- B) The graph shows a negative correlation. The more cups of coffee you drink, the fewer hours of sleep you get. This is a discrete data set because the graph represents *whole* cups of coffee and half hour increments of sleep.
- C) $(7.5, 2)$ and $(8.5, 1)$; $y = -1x + 9.5$
- D) If you drink 4 cups of coffee, you will sleep 5.5 hours. This is interpolation because you can use your line to find the information between the given data points.
- E) With a slope of -1 , you will lose 1 hour of sleep for each cup of coffee you drink after 12 p.m. The y -intercept of $(0, 9.5)$ means that when you sleep 0 hours, you have consumed 9.5 cups of coffee after 12 p.m.

2)

- A) l : length, w : width
 $44 = 2l + 2w$
 $l = w + 2$
- B) 10 yards by 12 yards
- C) 30 feet by 36 feet
- D) $2l + 2w < 44$

- | | |
|-------|-------|
| 3) B | 18) C |
| 4) C | 19) C |
| 5) C | 20) A |
| 6) A | 21) C |
| 7) D | 22) D |
| 8) B | 23) B |
| 9) A | 24) A |
| 10) C | 25) B |
| 11) B | 26) A |
| 12) D | 27) C |
| 13) D | 28) A |
| 14) C | 29) B |
| 15) A | 30) D |
| 16) B | 31) C |
| 17) D | 32) A |

33)

- domain: $(-\infty, \infty)$, range: $(-\infty, \infty)$
- $f(x) = 3x$
- given graph
- $\{(-2, -2), (-1, -1), (0, 0), \dots\}$
- $y = x - 1$

34)

- one solution
- two solutions
- no solutions
- infinite solutions

35)

- $Q + I$
- $I + I$
- $Q \cdot Q$
- $I \cdot I$