# Agenda

- Warm Up                                                    10 min
- Checkup time                                           5 min
  - ~~Check, copies~~
- Finish Unscramble?                               10 min
  - ~~Check, copies~~
- Window/Door                                          10 min
- Gauntlet: "Wine & Heart Disease"        30 min
- Project + practice test
  - *Look at course request forms*
- Exit Pass                                                 5 min

# Warm Up

*Can an SAT Mathematics score be used to predict an SAT Critical Reading score?*

1. Use your calculator to calculate the equation of the regression line.

2. I scored a 740 on the Math portion. Predict my Critical Reading score.

3. Let's say my actual Critical Reading score was 720. What is the residual of my Critical Reading score?

4. Briefly interpret your slope and y-intercept (from #2) in context.

| Math | Critical Reading |
|------|------------------|
| 370  | 430              |
| 550  | 550              |
| 520  | 520              |
| 450  | 550              |
| 570  | 540              |
| 520  | 510              |
| 540  | 510              |
| 520  | 490              |
| 540  | 620              |
| 610  | 350              |
| 540  | 410              |

# Warm Up ANSWERS

*Can an SAT Mathematics score be used to predict an SAT Critical Reading score?*

1. Three outliers at 370, 450, 610. After deleting, **y = 0.7791x + 100**

2. I scored a 740 on the Math portion. Predict my Critical Reading score.
   **676.534**

3. Let's say my actual Critical Reading score was 720. What is the residual of my Critical Reading score?
   *720 – 676.534 =* **43.466**

4. Briefly interpret your slope <u>and</u> y-intercept (from #2) in context.

| Math | Critical Reading |
|------|------------------|
| 370  | 430              |
| 550  | 550              |
| 520  | 520              |
| 450  | 550              |
| 570  | 540              |
| 520  | 510              |
| 540  | 510              |
| 520  | 490              |
| 540  | 620              |
| 610  | 350              |
| 540  | 410              |

Do you prefer **milk** chocolate or **dark** chocolate?

# Checkup time

# "Unscramble" Game (P.2)

- Groups of 4. *Dry erase marker & whiteboard.*

- I will give your group a problem.

- When <u>everyone in your group</u> has done the problem (*with work shown*), raise your hands.

- Each problem has a letter on the back. Unscramble all the letters to answer:
  **What was I doing when I first saw my wife?**
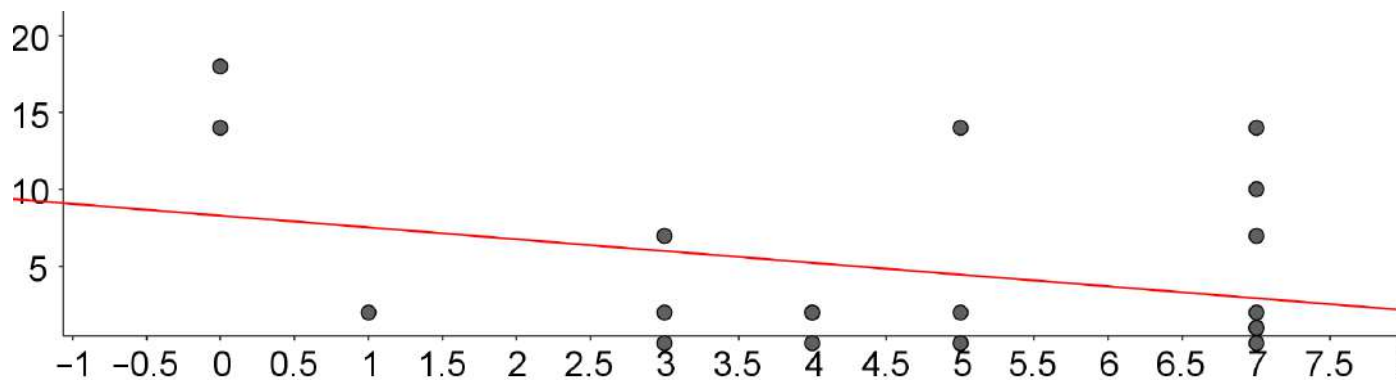
- **+5 extra credit to the winning group.**

# Window/Door

*On our 1$^{st}$ day, I asked you how many days in a typical week you exercise, and I asked you how many days it'd been since you ate fast food. Can you predict fast-food habits with exercise habits?*

1. Comment on the scatterplot.
2. Interpret the coefficient of determination.
3. Summarize what the slope means.
4. Summarize what the y-intercept means.
5. Let's say you exercise 3 days in a typical week, and it's been 5 days since you ate fast food. Calculate your residual.
6. Let's say you exercise 5 days in a typical week, and the <u>residual</u> of your eating habits is -2.45. How many days has it been since you ate fast food?

| Exercise | Fast food |
|----------|-----------|
| 0 | 14 |
| 0 | 18 |
| 1 | 2 |
| 3 | 2 |
| 3 | 47 |
| 3 | 0 |
| 3 | 7 |
| 4 | 2 |
| 4 | 0 |
| 4 | 2 |
| 5 | 14 |
| 5 | 0 |
| 5 | 2 |
| 5 | 0 |
| 7 | 7 |
| 7 | 10 |
| 7 | 1 |
| 7 | 1 |
| 7 | 14 |
| 7 | 0 |
| 7 | 1 |
| 7 | 2 |

# Window/Door

*On our 1ˢᵗ day, I asked you how many days in a typical week you exercise, and I asked you how many days it'd been since you ate fast food. Can you predict fast-food habits with exercise habits?*



r = -0.3121
r² = 0.0974
y = -0.77x + 8.3

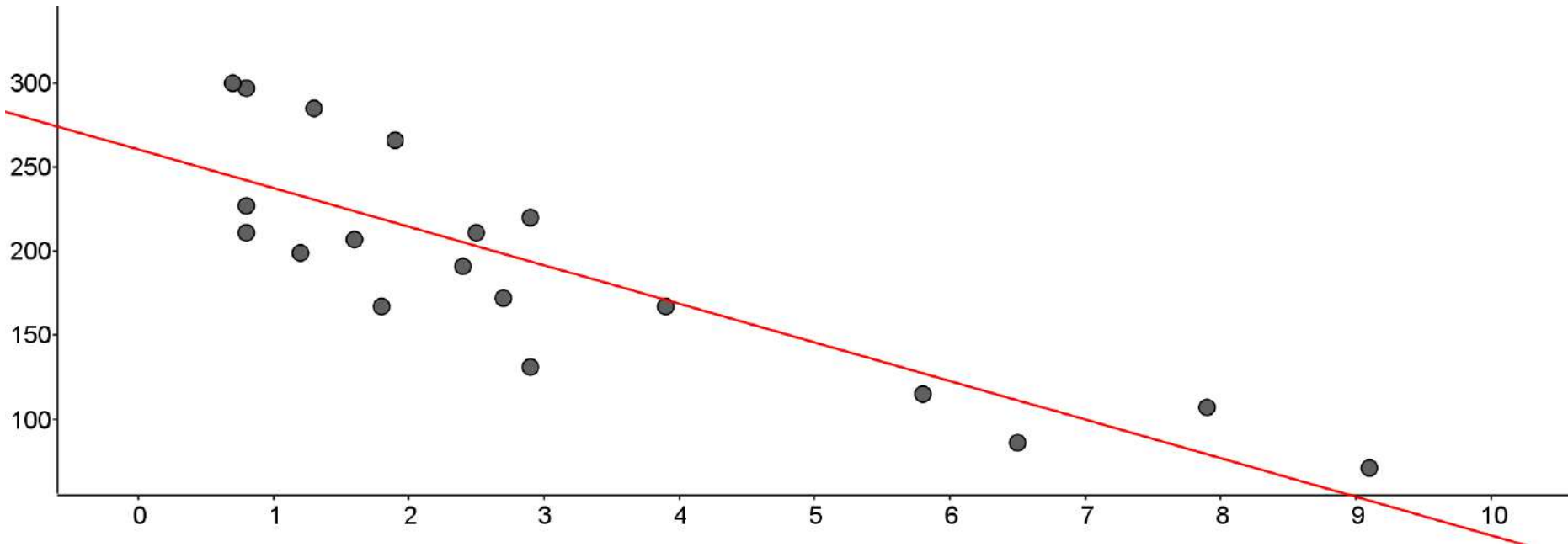| Exercise | Fast food |
|----------|-----------|
| 0 | 14 |
| 0 | 18 |
| 1 | 2 |
| 3 | 2 |
| ~~3~~ | ~~47~~ |
| 3 | 0 |
| 3 | 7 |
| 4 | 2 |
| 4 | 0 |
| 4 | 2 |
| 5 | 14 |
| 5 | 0 |
| 5 | 2 |
| 5 | 0 |
| 7 | 7 |
| 7 | 10 |
| 7 | 1 |
| 7 | 1 |
| 7 | 14 |
| 7 | 0 |
| 7 | 1 |
| 7 | 2 |

# GAUNTLET: "Wine & Heart Disease"

- Groups of 3-4. Elect a Writer to do the worksheet.

- After each problem (#1, #2, #3, #4, #5), show me.
  - Thumb Up → Flawless.
  - Thumb Down → At least one flaw. **You get 1 point.**

- You get 1 *Free Pass* and 1 *Pointer.* Both can only be used in response to a mistake.

- Winner = Group with least points.
  - In case of tie, Winner = finished first.

| Country | Alcohol from wine (liters/year) | Heart disease deaths (per 100,000) |
| --- | --- | --- |
| Australia | 2.5 | 211 |
| Austria | 3.9 | 167 |
| Belgium | 2.9 | 131 |
| Canada | 2.4 | 191 |
| Denmark | 2.9 | 220 |
| Finland | 0.8 | 297 |
| France | 9.1 | 71 |
| Germany | 2.7 | 172 |
| Iceland | 0.8 | 211 |
| Ireland | 0.7 | 300 |
| Italy | 7.9 | 107 |
| Netherlands | 1.8 | 167 |
| New Zealand | 1.9 | 266 |
| Norway | 0.8 | 227 |
| Spain | 6.5 | 86 |
| Sweden | 1.6 | 207 |
| Switzerland | 5.8 | 115 |
| United Kingdom | 1.3 | 285 |
| United States | 1.2 | 199 |

*Wrong (forgot to check for outliers)*
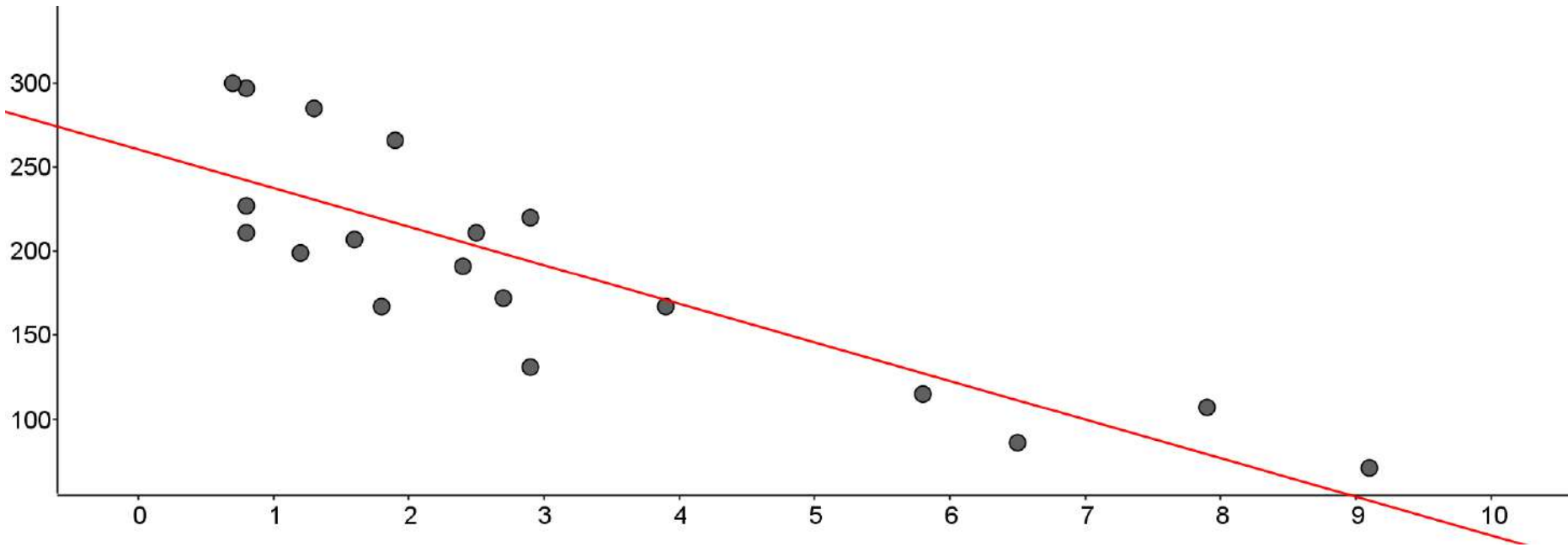
$y = -22.97x + 260.56$

$r = -0.8428$

$r^2 = 0.7103$

*Correct*

$y = -24.64x + 263.99$
$r = -0.8095$
$r^2 = 0.6553$

# Course Request sheets

- Counselors available both lunches today, tomorrow.
- Important links:
  - Department summaries → **tinyurl.com/RCHS-catalog-summary**
  - Full course descriptions → **tinyurl.com/RCHS-catalog-2020**
  - A-G catalog → **tinyurl.com/RCHS-A-G-2020**
- Make sure to:
  1. Sign, and get your parent to sign.
  2. Read prerequisites.
  3. Choose backups carefully. Don't leave them blank.
- Bring to class TODAY, so I can check it.
- Due to your period 2 teacher this Friday 2/7.

# Study Hall

1. Work on your Project #2.

2. Work on your practice test.

3. I'll be looking at your Course Request forms.

# Exit Pass

The regression equation *y = 41.35 + 3.11x*
predicts a student's height (y) based on their
handspan (x).

1. Mr. Colligan's handspan is 8.5 inches. Predict his height.

2. Mr. Colligan's actual height is 75 inches. What is the value of his residual?