Due: 1/14/2025 At the end of the hour. Name: _____

4.6 Practice

with Calc Chat and Calc View

1. The table shows the daily high temperatures and how any cups of hot chocolate are sold at a coffee shop for eight randomly selected days. (See Example 1.)

Temperature (°F), x	30	36	44	51	60	68	75	82
Cups of Hot Chocolate, y	45	43	36	35	30	27	23	17

a. Make a scatter plot of the data and draw a line of fit.

b. Write an equation of the line of fit.

c. Interpret the slope and the y-intercept of the line of fit.

2. The table shows the admission costs (in dollars) and the average number of daily visitors at an amusement park each year for the past 8 years. Find an equation of a line of fit. What is the expected daily attendance when admission is free?

Cost (dollars), x	20	21	22	24	25	27	28	30
Daily Attendance, y	940	935	940	925	920	905	910	890

3. **CONNECTING TO REAL LIFE** The table shows the numbers (in millions) of active accounts for two social media websites over the past five years. Assuming this trend continues, how many active accounts will Website B have when Website A has 280 million active accounts? Justify your answer. (See Example 2.)

Website A, x	Website B, y
312	188
306	215
300	235
299	236
293	253

X. **DIG DEEPER** The table shows the heights y (in feet) of a baseball x seconds after it was hit.

Seconds, x	Height (feet), y
0	3
0.5	39
1	67
1.5	87
2	99

a. Predict the height after 5 seconds.

b. The actual height after 5 seconds is about 3 feet. Why might this be different from your prediction?

Review & Refresh

5. Solve $7x - 8y = 12$ for y.

6. Graph $y = -4x + 5$.

RESOURCES

1. The table shows the daily high temperatures and how any cups of hot chocolate are sold at a coffee shop for eight randomly selected days. (See Example 1.)

Temperature (°F), x	30	36	44	51	60	68	75	82
Cups of Hot Chocolate, y	45	43	36	35	30	27	23	17

a. Make a scatter plot of the data and draw a line of fit.

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c. Interpret the slope and the y-intercept of the line of fit.

(60, 30)

(30, 45)

$m = \frac{30-45}{60-30} = \frac{-15}{30} = -\frac{1}{2}$ ⇒ 1 Hot Choc for every 2 degrees

Change in Hot Choc

Change in Temp

Increase

$y - y_1 = m(x - x_1)$

$y - 45 = -\frac{1}{2}(x - 30)$

Temp HC

(0, 60)

Lower Temp More HC

Count by 10's

$y - 45 = -\frac{1}{2}x + 15$

$y = -\frac{1}{2}x + 60$

$b = 60$

2. The table shows the admission costs (in dollars) and the average number of daily visitors at an amusement park each year for the past 8 years. Find an equation of a line of fit. What is the expected daily attendance when admission is free?

Cost (dollars), x	20	21	22	24	25	27	28	30
Daily Attendance, y	940	935	940	925	920	905	910	890

0
1040

(20, 940)

(30, 890)

$m = \frac{940 - 890}{20 - 30} = \frac{-50}{-10} = \frac{5}{1}$

$y - 940 = -5(x - 20)$

$y - 940 = -5x + 100$

$y = -5x + 1040$

(0, 1040)

940
935
925
920
905
890
880
910

Count by 10

20 25
Count by 5

3. **CONNECTING TO REAL LIFE** The table shows the numbers (in millions) of active accounts for two social media websites over the past five years. Assuming this trend continues, how many active accounts will Website B have when Website A has 280 million active accounts? Justify your answer. (See Example 2.)

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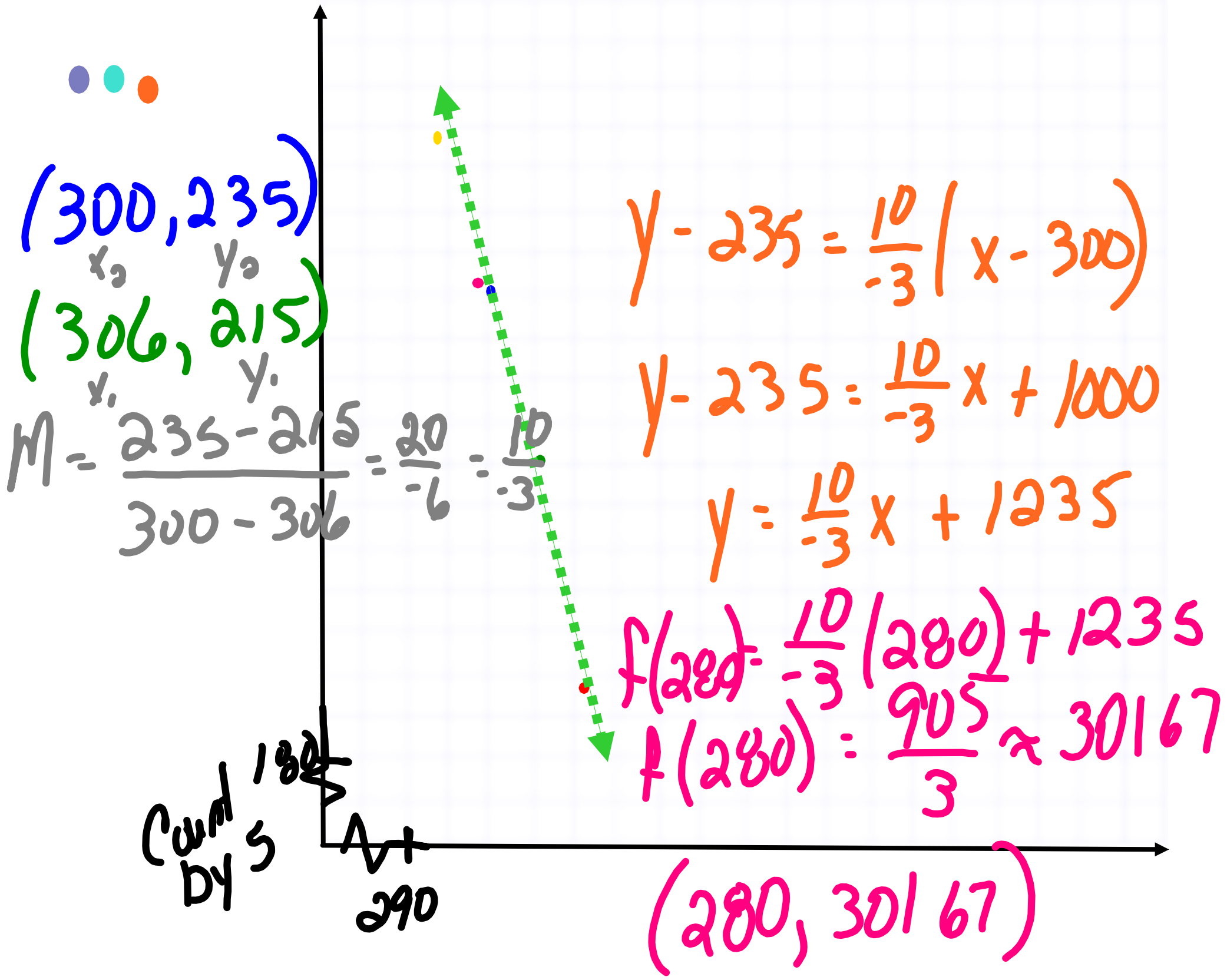
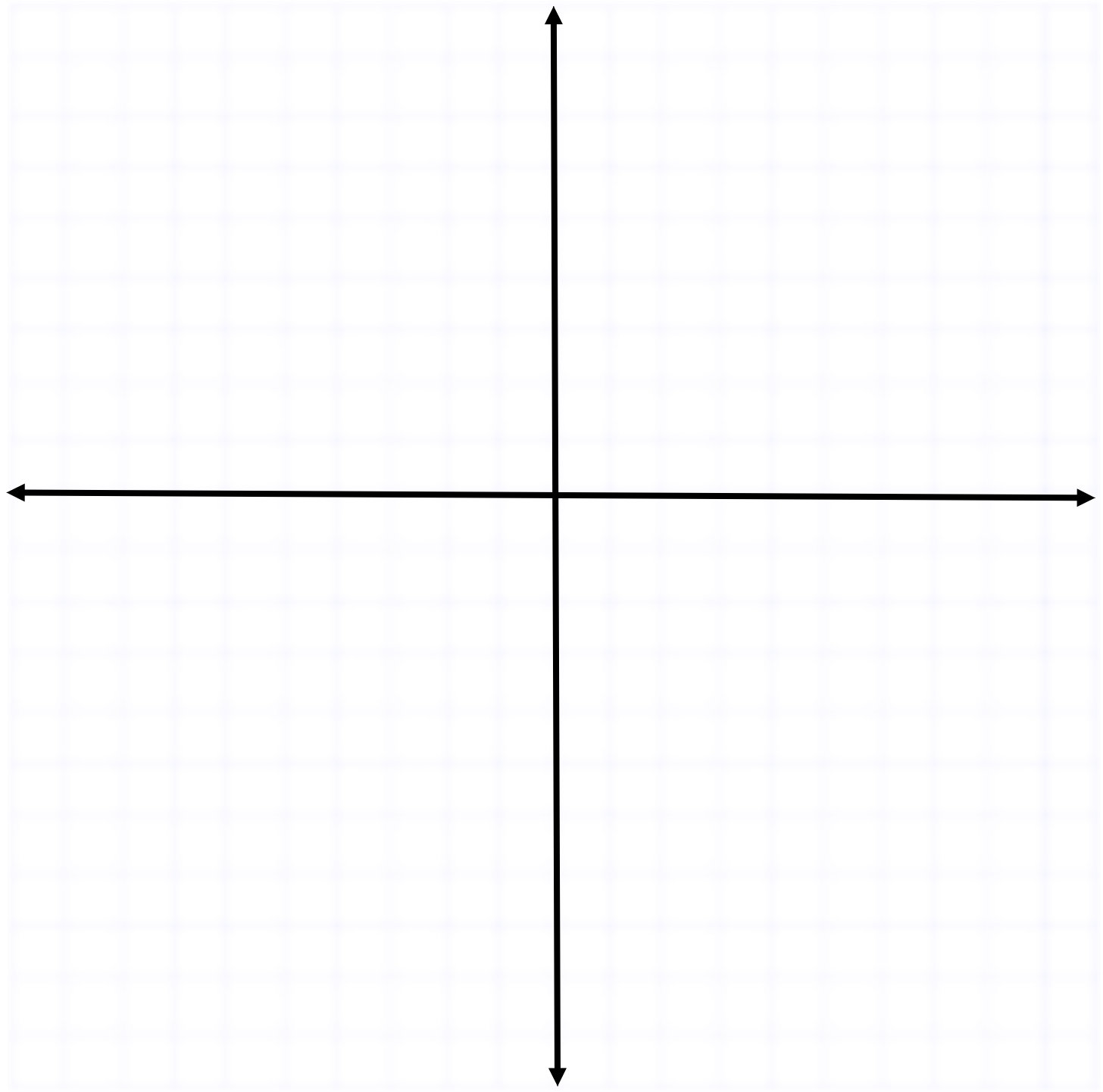


5. Solve $7x - 8y = 12$ for y.

6. Graph $y = -4x + 5$.