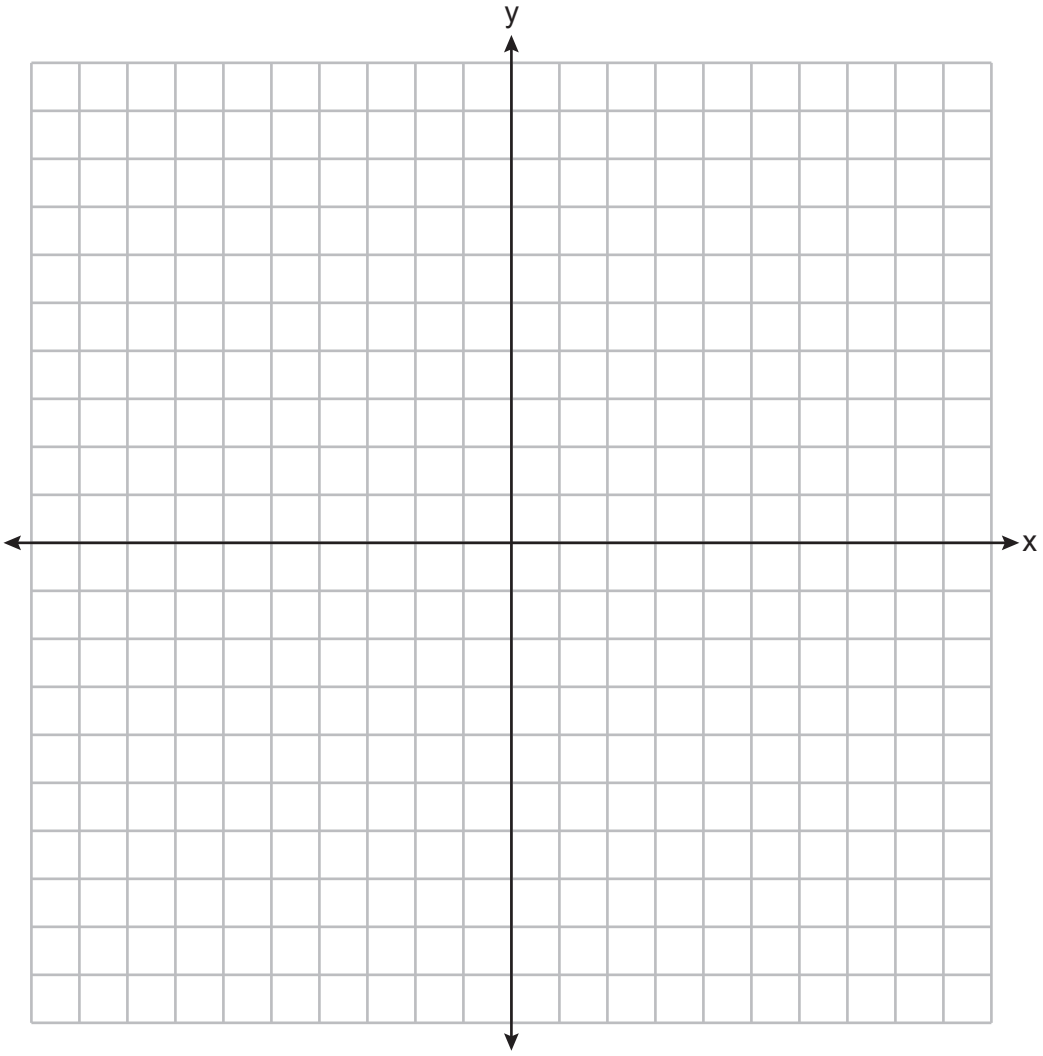
Part II

Answer all 6 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [12]

25 On the set of axes below, graph $f(x) = x^2 + 4x + 1$.



State the coordinates of the minimum.

26 If $f(x) = \frac{30x^2}{x + 2}$, determine the value of $f\left(\frac{1}{2}\right)$.

29 Use the quadratic formula to determine the exact roots of the equation $x^2 + 3x - 6 = 0$.

Part III

Answer all 4 questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [16]

31 The owner of an ice cream stand kept track of the number of ice cream cones that were sold each day of the first week in June. She compared the ice cream sales to the average daily temperature. The data are shown in the table below.

Average Daily Temp. (x)	72	75	81	78	77	76	80
Daily Ice Cream Cone Sales (y)	126	183	263	229	200	185	249

State the linear regression equation for these data, rounding all values to the *nearest hundredth*.

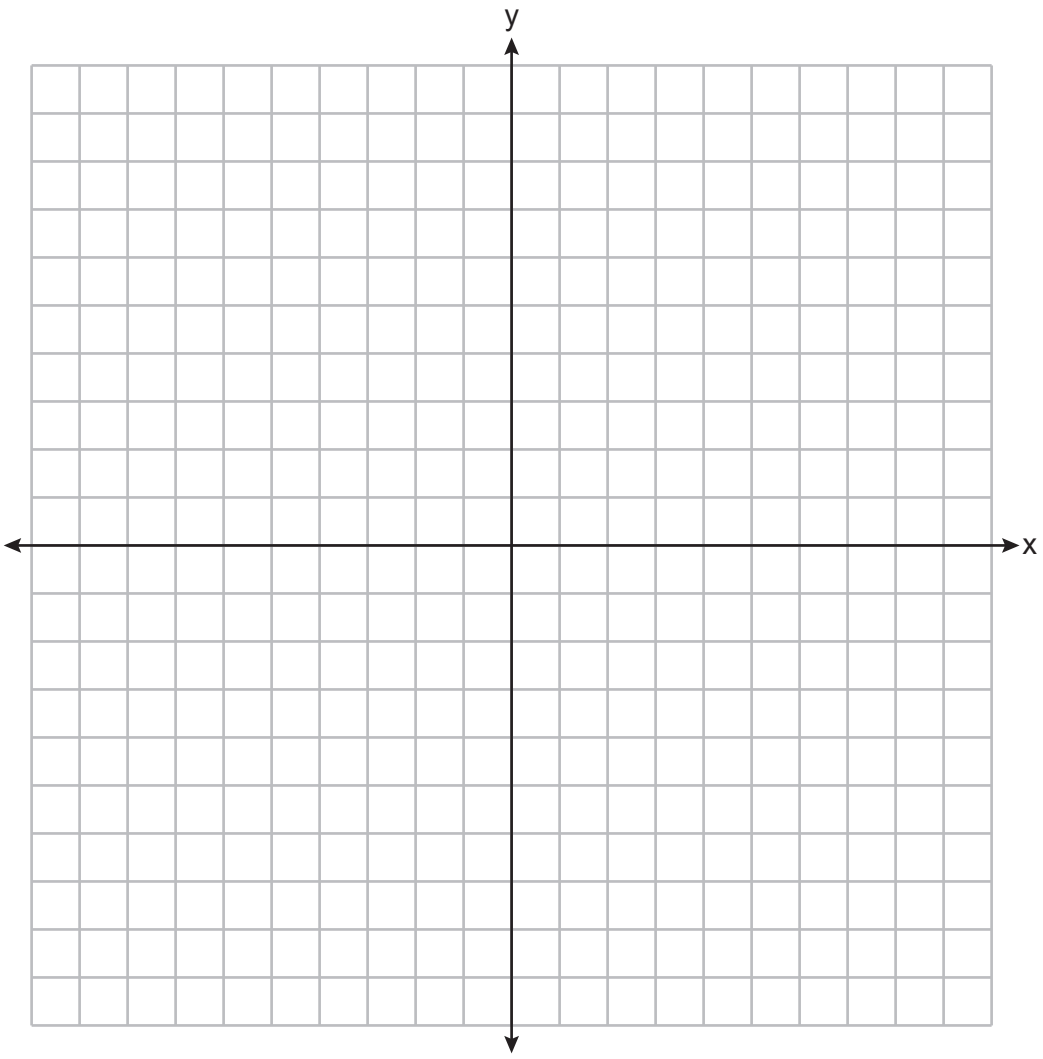
State the correlation coefficient, to the *nearest hundredth*, for the line of best fit for these data.

State what this correlation coefficient indicates about the linear fit of the data.

32 Graph the system of inequalities on the set of axes below:

$$y > 3x - 4$$
$$x + 2y \leq 6$$

Label the solution set *S*.



Is the point (2,2) a solution to the system? Justify your answer.

34 Solve the system of equations algebraically for all values of x and y.

$$y = x^2 + 4x - 1$$

$$y = 2x + 7$$

Part IV

Answer the question in this part. A correct answer will receive 6 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided to determine your answer. Note that diagrams are not necessarily drawn to scale. A correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [6]

35 Jen joined the Fan Favorite Movie Club at the local movie theater. At this theater, the cost of admission in May and June remains the same. In May, she saw 2 matinees and 3 regular-priced shows and spent $38.50. In June, she went to 6 matinees and one regular-priced show and spent $47.50.

Write a system of equations to represent the cost, m, of a matinee ticket and the cost, r, of a regular-priced ticket.

Jen said she spent $5.75 on each matinee and $9 on each regular show. Is Jen correct? Justify your answer.

Use your system of equations to algebraically determine both the actual cost of each matinee ticket and the actual cost of each regular ticket.