Linear Functions & Systems Maze

Name _____ Period _____

Start in the top-left room. Solve each problem. Go through the door that shows your answer. Show your work on the answer grid.

START

Write the equation of the line through $(-2, 7)$ and $(4, -5)$.

$y = -2x + 3$

Write, in slope-intercept form, the line through $(3, -4)$ perpendicular to $2x - 6y = 9$.

$y = -3x + 5$

Solve the system.

$$\begin{cases} 4x - 3y = 19 \\ 3x + 5y = 7 \end{cases}$$

$(4, -1)$

Which point is a solution of both inequalities?

$$\begin{cases} y > -x + 2 \\ y \le 2x - 1 \end{cases}$$

$-\frac{4}{3}$

$y = 3x - 13$

$\frac{3}{4}$

4

150 min

(3, 2)

(1, 3)

Find the slope of a line perpendicular to the line through $(-3, 1)$ and $(5, -5)$.

$y = 5.7x + 63$

Find the line of best fit (regression line).

x	1	2	3	4	5
y	52	58	61	69	75

42

Maximize $P = 5x + 4y$ subject to $x \ge 0, y \ge 0, x + 2y \le 12, 3x + y \le 21$.

24

How many solutions does the system have?

$6x - 4y = 10$

$y = 1.5x - 2.5$

$(-1, 2, 4)$

$y = 5.7x + 45.9$

$y = 5.7x + 4.59$

46

35

exactly one

none

Solve the system.

$$\begin{cases} x + y + z = 5 \\ 2x - y + z = 9 \\ x + 2y - z = -4 \end{cases}$$

$(2, 1, 4)$

Boundary line and shading for $y \le -\frac{1}{2}x + 3$?

60 min

Plan A: \$20 plus \$0.10 per min. Plan B: \$5 plus \$0.25 per min. For how many minutes do they cost the same?

75 min

Find the x-intercept of $5x - 3y = 30$.

$(2, -1, 4)$

8

dashed, below

300

$3x - 2y = 7$

-6

10

A show sold 60 tickets for \$500: adult \$12, student \$8, child \$5. Adult tickets were twice the child tickets. How many student tickets?

48

A tank holds 340 gal at 5 min and 180 gal at 9 min, draining at a constant rate. How many gallons at 12 min?

60

Line through $(-1, 5)$ parallel to $3x + 2y = 8$. Write it in standard form.

$3x + 2y = 7$

FINISH

You made it!

Linear Functions Maze: Answer Grid

Name _____ Period _____

Write each answer in the order you found it, and show your work for that room.

1	Answer: _____	Work:
2	Answer: _____	Work:
3	Answer: _____	Work:
4	Answer: _____	Work:
5	Answer: _____	Work:
6	Answer: _____	Work:
7	Answer: _____	Work:
8	Answer: _____	Work:
9	Answer: _____	Work:
10	Answer: _____	Work: