A cargo helicopter delivers only 100-pound packages and 120-pound packages. For each delivery trip, the helicopter must carry at least 10 packages, and the total weight of the packages can be at most 1,100 pounds. What is the maximum number of 120-pound packages that the helicopter can carry per trip?

A. 2

B. 4

C. 5

D. 6

Marisa needs to hire at least 10 staff members for an upcoming project. The staff members will be made up of junior directors, who will be paid $640 per week, and senior directors, who will be paid $880 per week. Her budget for paying the staff members is no more than $9,700 per week. She must hire at least 3 junior directors and at least 1 senior director. Which of the following systems of inequalities represents the conditions described if x is the number of junior directors and y is the number of senior directors?

A.
$$640x + 880y \geq 9,700$$
$$x + y \leq 10$$
$$x \geq 3$$
$$y \geq 1$$

B.
$$640x + 880y \leq 9,700$$
$$x + y \geq 10$$
$$x \geq 3$$
$$y \geq 1$$

C.
$$640x + 880y \geq 9,700$$
$$x + y \geq 10$$
$$x \leq 3$$
$$y \leq 1$$

D.
$$640x + 880y \leq 9,700$$
$$x + y \leq 10$$
$$x \leq 3$$
$$y \leq 1$$

$y \le x$

$y \le -x$

Which of the following ordered pairs (x,y) is a solution to the system of inequalities above?

A. $(1,0)$

B. $(-1,0)$

C. $(0,1)$

D. $(0,-1)$

In North America, the standard width of a parking space is at least 7.5 feet and no more than 9.0 feet. A restaurant owner recently resurfaced the restaurant's parking lot and wants to determine the number of parking spaces, n, in the parking lot that could be placed perpendicular to a curb that is 135 feet long, based on the standard width of a parking space. Which of the following describes all the possible values of n ?

A. $18 \leq n \leq 135$

B. $7.5 \leq n \leq 9$

C. $15 \leq n \leq 135$

D. $15 \leq n \leq 18$

$$y < -4x + 4$$

Which point (x, y) is a solution to the given inequality in the xy-plane?

A. $(-4, 0)$

B. $(0, 5)$

C. $(2, 1)$

D. $(2, -1)$

A certain elephant weighs 200 pounds at birth and gains more than 2 but less than 3 pounds per day during its first year. Which of the following inequalities represents all possible weights w, in pounds, for the elephant 365 days after birth?

A. $400 < w < 600$

B. $565 < w < 930$

C. $730 < w < 1{,}095$

D. $930 < w < 1{,}295$

$$H = 120p + 60$$

The Karvonen formula above shows the relationship between Alice's target heart rate H, in beats per minute (bpm), and the intensity level p of different activities. When $p = 0$, Alice has a resting heart rate. When $p = 1$, Alice has her maximum heart rate. It is recommended that p be between 0.5 and 0.85 for Alice when she trains. Which of the following inequalities describes Alice's target training heart rate?

A. $120 \leq H \leq 162$

B. $102 \leq H \leq 120$

C. $60 \leq H \leq 162$

D. $60 \leq H \leq 102$

A number x is at most 17 less than 5 times the value of y. If the value of y is 3, what is the greatest possible value of x?

An event planner is planning a party. It costs the event planner a onetime fee of $$35$ to rent the venue and $$10.25$ per attendee. The event planner has a budget of $$200$. What is the greatest number of attendees possible without exceeding the budget?

A model estimates that whales from the genus *Eschrichtius* travel 72 to 77 miles in the ocean each day during their migration. Based on this model, which inequality represents the estimated total number of miles, x, a whale from the genus *Eschrichtius* could travel in 16 days of its migration?

A. $72 + 16 \leq x \leq 77 + 16$

B. $(72)(16) \leq x \leq (77)(16)$
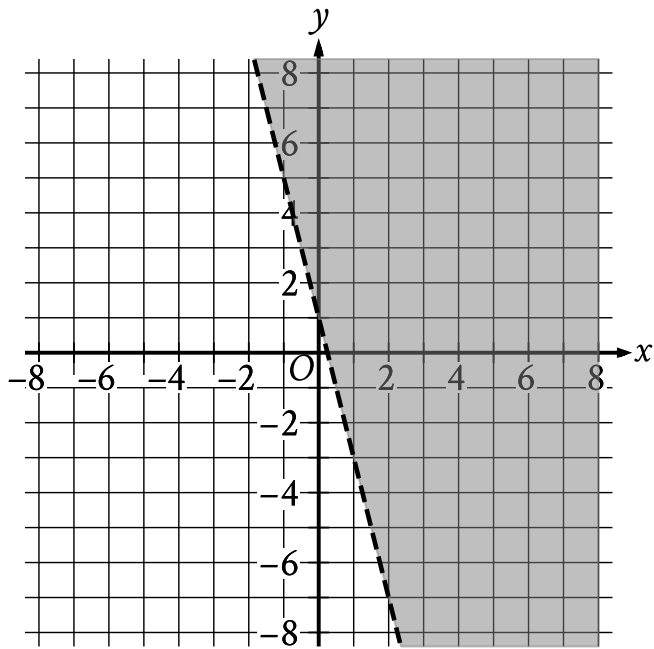
C. $72 \leq 16 + x \leq 77$

D. $72 \leq 16x \leq 77$

The average annual energy cost for a certain home is $4,334. The homeowner plans to spend $25,000 to install a geothermal heating system. The homeowner estimates that the average annual energy cost will then be $2,712. Which of the following inequalities can be solved to find t, the number of years after installation at which the total amount of energy cost savings will exceed the installation cost?

A. $25,000 > (4,334 - 2,712)t$

B. $25,000 < (4,334 - 2,712)t$

C. $25,000 - 4,334 > 2,712t$

D. $25,000 > \dfrac{4,332}{2,712}t$

The shaded region shown represents the solutions to which inequality?

A. $y < 1 + 4x$

B. $y < 1 - 4x$

C. $y > 1 + 4x$

D. $y > 1 - 4x$

$$y \le 3x + 1$$

$$x - y > 1$$

Which of the following ordered pairs (x, y) satisfies the system of inequalities above?

A. $(-2, -1)$

B. $(-1, 3)$

C. $(1, 5)$

D. $(2, -1)$