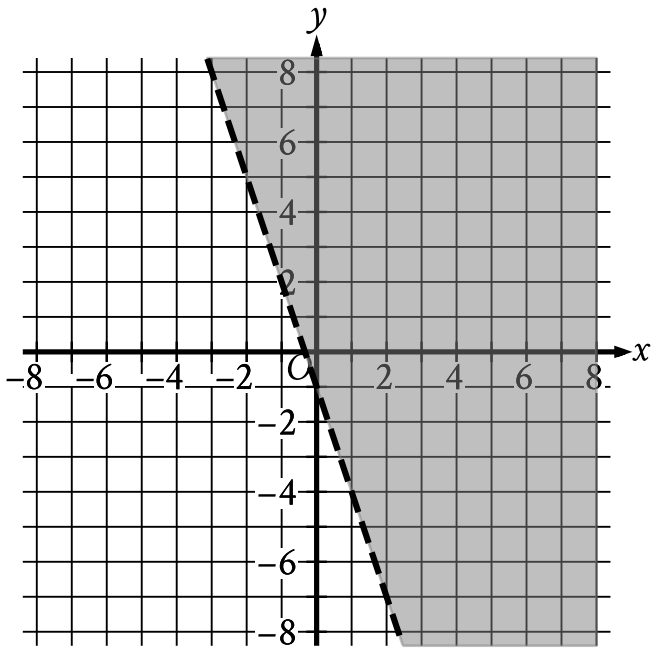
Question ID f6809431

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: f6809431



The shaded region shown represents the solutions to which inequality?

A. $y < -1 + 3x$

B. $y < -1 - 3x$

C. $y > -1 + 3x$

D. $y > -1 - 3x$

Question ID 153dbaa0

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 153dbaa0

A city employee will plant two types of bushes, azaleas and boxwoods, in a park. There will be no more than 164 total bushes planted, and the number of azaleas planted will be at most three times the number of boxwoods planted. Which of the following systems of inequalities best represents this situation, where a is the number of azaleas that will be planted, and b is the number of boxwoods that will be planted?

A. $a + b \geq 164$
$3a \geq b$

B. $a + b \geq 164$
$a \leq 3b$

C. $a + b \leq 164$
$3a \geq b$

D. $a + b \leq 164$
$a \leq 3b$

Question ID 90381488

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 90381488

$$11x + 14y \leq 115$$

Anthony will spend at most $\$115$ to purchase x small cheese pizzas and y large cheese pizzas for a team dinner. The given inequality represents this situation. Which of the following is the best interpretation of $14y$ in this context?

A. The amount, in dollars, Anthony will spend on each large cheese pizza

B. The amount, in dollars, Anthony will spend on each small cheese pizza

C. The total amount, in dollars, Anthony will spend on large cheese pizzas

D. The total amount, in dollars, Anthony will spend on small cheese pizzas

Question ID 58740e7b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 58740e7b

A salesperson's total earnings consist of a base salary of x dollars per year, plus commission earnings of 11% of the total sales the salesperson makes during the year. This year, the salesperson has a goal for the total earnings to be at least 3 times and at most 4 times the base salary. Which of the following inequalities represents all possible values of total sales s, in dollars, the salesperson can make this year in order to meet that goal?

A. $2x \leq s \leq 3x$

B. $\frac{2}{0.11}x \leq s \leq \frac{3}{0.11}x$

C. $3x \leq s \leq 4x$

D. $\frac{3}{0.11}x \leq s \leq \frac{4}{0.11}x$

Question ID 31cb1ec6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 31cb1ec6

$$2x - y > 883$$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A.

x	y
440	0
441	-2
442	-4

B.

x	y
440	0
442	-2
441	-4

C.

x	y
442	0
440	-2
441	-4

D.

x	y
442	0
441	-2
440	-4

Question ID ede444e6

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: ede444e6

The minimum value of x is 12 less than 6 times another number n. Which inequality shows the possible values of x?

A. $x \leq 6n - 12$

B. $x \geq 6n - 12$

C. $x \leq 12 - 6n$

D. $x \geq 12 - 6n$

Question ID 9020873d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 9020873d

In a set of four consecutive odd integers, where the integers are ordered from least to greatest, the first integer is represented by x. The product of 12 and the fourth odd integer is at most 26 less than the sum of the first and third odd integers. Which inequality represents this situation?

A. $12(x+6) \leq x+(x+4)-26$

B. $12(x+6) \geq 26-(x+(x+4))$

C. $12(x+4) \leq x+(x+3)-26$

D. $12(x+4) \geq 26-(x+(x+3))$

Question ID 2150c15c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 2150c15c

A business owner plans to purchase the same model of chair for each of the 81 employees. The total budget to spend on these chairs is $\$14{,}000$, which includes a 7% sales tax. Which of the following is closest to the maximum possible price per chair, before sales tax, the business owner could pay based on this budget?

A. $\$148.15$

B. $\$161.53$

C. $\$172.84$

D. $\$184.94$

Question ID 3921f7b2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 3921f7b2

A particular botanist classifies a species of plant as tall if its typical height when fully grown is more than 100 centimeters. Each of the following inequalities represents the possible heights h, in centimeters, for a specific plant species when fully grown. Which inequality represents the possible heights h, in centimeters, for a tall plant species?

A. $106 < h < 158$

B. $80 < h < 100$

C. $42 < h < 87$

D. $17 < h < 85$

Question ID 8b53d350

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 8b53d350

$$y > 4x + 8$$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A.

x	y
2	19
4	30
6	41

B.

x	y
2	8
4	16
6	24

C.

x	y
2	13
4	18
6	23

D.

x	y
2	13
4	21
6	29

Question ID 76b636f2

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 76b636f2

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?

Question ID c5223e7a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: c5223e7a

The triangle inequality theorem states that the sum of any two sides of a triangle must be greater than the length of the third side. If a triangle has side lengths of 6 and 12, which inequality represents the possible lengths, x, of the third side of the triangle?

A. $x < 18$

B. $x > 18$

C. $6 < x < 18$

D. $x < 6$ or $x > 18$

Question ID c4afe86c

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: c4afe86c

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. $72 \leq 16x \leq 77$

Question ID 765f5fcb

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 765f5fcb

$$y > 7x - 4$$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A.

x	y
3	13
5	27
8	48

B.

x	y
3	17
5	31
8	52

C.

x	y
3	21
5	27
8	52

D.

x	y
3	21
5	35
8	56

Question ID 38389fcd

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 38389fcd

A moving truck can tow a trailer if the combined weight of the trailer and the boxes it contains is no more than $4{,}600$ pounds. What is the maximum number of boxes this truck can tow in a trailer with a weight of 500 pounds if each box weighs 120 pounds?

A. 34

B. 35

C. 38

D. 39

Question ID 07af52a4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 07af52a4

A small business owner budgets $\$2,200$ to purchase candles. The owner must purchase a minimum of 200 candles to maintain the discounted pricing. If the owner pays $\$4.90$ per candle to purchase small candles and $\$11.60$ per candle to purchase large candles, what is the maximum number of large candles the owner can purchase to stay within the budget and maintain the discounted pricing?

Question ID 6ec27879

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 6ec27879

The length of a rectangle is 50 inches and the width is x inches. The perimeter is at most 210 inches. Which inequality represents this situation?

A. $2x + 100 \leq 210$

B. $2x + 100 \geq 210$

C. $2x + 50 \leq 210$

D. $2x + 50 \geq 210$

Question ID da3a02f4

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: da3a02f4

A truck can haul a maximum weight of $5{,}630$ pounds. During one trip, the truck will be used to haul a 190-pound piece of equipment as well as several crates. Some of these crates weigh 25 pounds each and the others weigh 62 pounds each. Which inequality represents the possible combinations of the number of 25-pound crates, x, and the number of 62-pound crates, y, the truck can haul during one trip if only the piece of equipment and the crates are being hauled?

A. $25x + 62y \leq 5{,}440$

B. $25x + 62y \geq 5{,}440$

C. $62x + 25y \leq 5{,}630$

D. $62x + 25y \geq 5{,}630$

Question ID 36d51706

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 36d51706

A team hosting an event to raise money for new uniforms plans to sell at least 140 tickets before this event and at least 220 tickets during this event to raise a total of at least $\$5{,}820$ from all tickets sold. The price of a ticket during this event is $\$3$ less than the price of a ticket before this event. Which inequality represents this situation, where x is the price, in dollars, of a ticket sold during this event?

A. $140(x+3)+220x \leq 5{,}820$

B. $140(x+3)+220x \geq 5{,}820$

C. $140(x-3)+220x \leq 5{,}820$

D. $140(x-3)+220x \geq 5{,}820$

Question ID 52d1b8ac

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

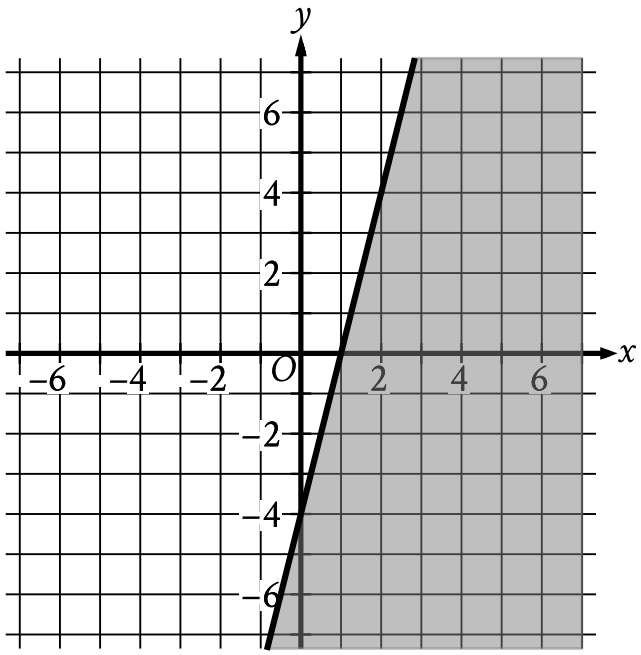
ID: 52d1b8ac

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 $\$300$. What is the greatest number of attendees possible without exceeding the budget?

Question ID f0bf037b

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: f0bf037b



The shaded region shown represents the solutions to an inequality. Which ordered pair (x, y) is a solution to this inequality?

A. $(-5, -6)$

B. $(-2, 5)$

C. $(1, 4)$

D. $(6, -2)$

Question ID 9074a76a

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 9074a76a

$$y \leq x + 7$$
$$y \geq -2x - 1$$

Which point (x, y) is a solution to the given system of inequalities in the *xy*-plane?

A. $(-14, 0)$

B. $(0, -14)$

C. $(0, 14)$

D. $(14, 0)$

Question ID b33a401e

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: b33a401e

A number x is at most 2 less than 3 times the value of y. If the value of y is -4, what is the greatest possible value of x?

Question ID 87423f12

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 87423f12

$$y < x$$
$$x < 22$$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given system of inequalities?

A.

x	y
19	18
20	19
21	20

B.

x	y
19	20
20	21
21	22

C.

x	y
23	22
24	23
25	24

D.

x	y
23	24
24	25
25	26

Question ID 1527f649

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 1527f649

For a snowstorm in a certain town, the minimum rate of snowfall recorded was 0.6 inches per hour, and the maximum rate of snowfall recorded was 1.8 inches per hour. Which inequality is true for all values of s, where s represents a rate of snowfall, in inches per hour, recorded for this snowstorm?

A. $s \geq 2.4$

B. $s \geq 1.8$

C. $0 \leq s \leq 0.6$

D. $0.6 \leq s \leq 1.8$

Question ID ffcded1d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: ffcded1d

$$y > 14$$
$$4x + y < 18$$

The point $(x, 53)$ is a solution to the system of inequalities in the *xy*-plane. Which of the following could be the value of x ?

A. -9

B. -5

C. 5

D. 9

Question ID 54d54b1d

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 54d54b1d

$$y < -4x + 4$$

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. $(2, -1)$

Question ID 40e1dce8

Assessment	Test	Domain	Skill	Difficulty
PSAT 8/9	Math	Algebra	Linear inequalities in one or two variables	Hard

ID: 40e1dce8

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?