

Equation of a Line Worksheet

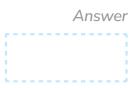
Algebra

Grades 6 to 8

Skill	Que	estio	ns
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Name:
Date:

Write the equation of a line in slope-intercept form when the slope is 3 and the y-intercept is -2.



Given two points on a line, (2, 5) and (4, 11), find the equation of the line in slope-intercept form.



3 Convert the equation 2y - 4x = 8 slope-intercept form.



4 Determine the slope of a line passing through the points (1, 3) and (5, 9).



Find the y-intercept of the line with the equation y = -2x + 7.

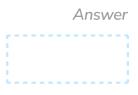


Equation of a Line Worksheet | Grades 6 to 8

Solve the equation 4x-7=3x+5 to find the x-value where the two lines represented by the equations intersect.

Answer

Given the equation 2y+6x=18 , find the y-value when $\,x=3$, representing a point on the line.



Determine if the point (2, 4) lies on the line represented by the equation y=2x-1



Solve the inequality 3y+2>5 to find the range of y-values that satisfy the inequality for the line represented by the equation y=-2x+1

Answer

Write an equation in slope-intercept form for a line passing through the point (5, -3) with a slope of $\frac{1}{4}$

Answer

Applied Questions

A car rental company charges a flat fee of \$30 plus an additional \$0.15 per mile for renting a car. Write an equation to represent the total cost, C, of renting a car for m miles. Use this equation to determine the cost of renting a car for a 150-mile road trip.



Emily is planting flowers in her garden. The number of flowers, n, she can plant depends on the length of the row in feet, l, according to the equation n=2l-5. Determine how many flowers Emily can plant if the row is 8 feet long.



A phone company charges a monthly fee of \$20 and an additional \$0.10 per text message sent. Write an equation to represent the monthly cost, C, based on the number of text messages, t. Determine the monthly cost if a customer sends 150 text messages.



Equation of a Line Worksheet | Grades 6 to 8

14	Sarah is saving money to buy a new bicycle. She currently has \$50 saved and
	plans to save \$10 each week. Write an equation to represent the total
	amount of money, y , Sarah will have after x weeks. Use this equation to
	determine how many weeks it will take for Sarah to have at least \$150.

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The temperature in a city is decreasing at a rate of 2 degrees Celsius per hour. Write an equation to represent the temperature, *T*, after *h* hours. If the current temperature is 28 degrees Celsius, determine how many hours it will take for the temperature to drop below 20 degrees Celsius.

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Answers

Question number	Question	Answers	Standard
1	Write the equation of a line in slope-intercept form when the slope is 3 and the y -intercept is -2.	$y=3x\!\!-\!2$	8.EE.B.5
2	Given two points on a line, (2, 5) and (4, 11), find the equation of the line in slope-intercept form.	y=3x-1	8.EE.B.5
3	Convert the equation $2y-4x=8$ to slope-intercept form.	y=2x+4	8.EE.B.5
4	Determine the slope of a line passing through the points (1, 3) and (5, 9).	The slope is $\frac{3}{2}$	8.EE.B.5
5	Find the $$ -intercept of the line with the equation $y=-2x+7.$	The -intercept is 7 y	8.EE.B.5
6	Solve the equation to find the -value with ere7the3tave 5 lines represented by the equations intersect.	The solution is $x=12$	8.EE.B.6
7	Given the equation find the $\ \ -$ value when $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\ \ +$ $\$	When , the - value i $s\! x=3$ y $y=0$	8.EE.B.6
8	Determine if the point (2, 4) lies on the line represented by the equation $y = 2x - 1$	No, the point (2, 4) does not lie on the line	8.EE.B.6

Equation of a Line Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
9	Solve the inequality $3y+2>5$ to find the range of y -values that satisfy the inequality for the line represented by the equation $y=-2x+1$	The solution is $y>1$	8.EE.B.6
10	Write an equation in slope-intercept form for a line passing through the point (5, -3) with a slope of $\frac{1}{4}$	The equation is $y = \frac{1}{4}x - 4\frac{1}{4}$	8.EE.B.6
11	A car rental company charges a flat fee of \$30 plus an additional \$0.15 per mile for renting a car. Write an equation to represent the total cost, C, of renting a car for m miles. Use this equation to determine the cost of renting a car for a 150-mile road trip.	The equation is $C=0.15m+30$. Substituting $m=150$ gives $C=52.5$, so the cost for a 150-mile road trip is \$52.50.	8.EE.B.5
12	Emily is planting flowers in her garden. The number of flowers, n , she can plant depends on the length of the row in feet, l , according to the equation $n=2l-5$. Determine how many flowers Emily can plant if the row is 8 feet long.	Substituting $l=8\mathrm{into}$ the equation gives $n=11$, so Emily can plant 11 flowers if the row is 8 feet long.	8.EE.B.5
13	A phone company charges a monthly fee of \$20 and an additional \$0.10 per text message sent. Write an equation to represent the monthly cost, , based on the number of text messages, . Determine the monthly cost if a customer sends 150 text messages.	The equation is $C=0.10t+20.$ Substituting $t=150$ gives $C=35$, so the monthly cost for 150 text messages is \$35.	8.EE.B.5

Equation of a Line Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
14	Sarah is saving money to buy a new bicycle. She currently has \$50 saved and plans to save \$10 each week. Write an equation to represent the total amount of money, y , Sarah will have after x weeks. Use this equation to determine how many weeks it will take for Sarah to have at least \$150.	The equation is $y=10x+50$. Solving for x when $y\geq 150$ gives , so it will take Sarah at least 10 weeks to have at least \$150.	8.EE.B.6
15	The temperature in a city is decreasing at a rate of 2 degrees Celsius per hour. Write an equation to represent the temperature, T after hoursh If the current temperature is 28 degrees Celsius, determine how many hours it will take for the temperature to drop below 20 degrees Celsius.	The equation is $T=-2h+28$. Solving for h when $T<20$ gives $h>4$, so it will take more than 4 hours for the temperature to drop below 20 degrees Celsius.	8.EE.B.6

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