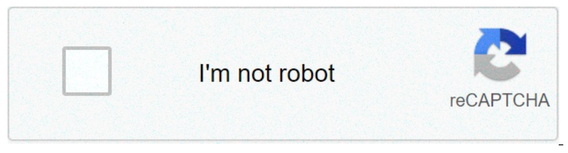

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Write an equation passing through the point and parallel to the given line

y = mx + c is an important equation of real life. The gradient, m, represents the rate of change (e.g. cost per concert ticket) and the intercept y, c, represents a starting value (e.g. an administrator fee). Consider that we have the date equation of a line, and this line is parallel to another line passing through any given point, and we have to find the required equation of the line with the help of the given line. Now let's explain this concept with the help of an example. Example: Find the equation of a straight line passing through the point $$\left ({1,2} \right) $ and parallel to another given line whose equation is $$2x â 3y + 5 = 0$$. First find the slope of the given line by comparing the intercept shape of the slope of a line as follows: \[\begin{gathered} 2x â 3y + 5 = 0 \\\\\\Rightarrow 3y = 2x + 5\\\\\\\\\\Rightarrow y = \frac{2}{3}x + \frac{5}{3}{3}{3}\\\\\\\\\\\\\\}{3}{3}{3}{3}{3}{3}{3}{3} \nd{\ Compare this with the slope intercept module to find the slope of the line $$y = mx + c$$. Now the slope of the given line is $$m = \frac{2}{3}$$$$, since the given line is parallel to the requested line and we know that the slope of the parallel is the same, i.e. under the condition of parallel lines $${m_1} = {m_2}$ Now the slope of the requested line is equal also a $ $ $$m = \frac{2}{3}$$, since the required line passes through the given point $$\left ({1,2} \right) $$. We find the equation of the required line using the slope point module, which is given by: \[\begin{gathered} y â {y_1} = m\left ({x â {x1}}} \right) \\\\\\\\Rightarrow y â 2 = \frac{2}{3}\left ({3} x â 1} \right) \ This is the equation of a straight line parallel to the line $$2x â 3y + 5 = 0$$. In this computed equation, note that the coefficients of $$x$ and $$y$ are the same. If you are seeing this message, it means that we are having trouble uploading external resources on our website. If you're behind a web filter, make sure *.kastatic.org and *.kasandbox.org domains are unlocked. We'll learn to find the equation of a line parallel to a line. Prove that the equation of a line parallel to a given line ax + of + Î" = 0, where Î" is a constant. Let, ax + by + c = 0 (b â¢ 0) be the equation of the given straight line. Now, convert the equation ax + of + c = 0 to its slope-intercept form.ax + per+ c = 0 â˜= 0 â˜= – ax – cDividing both sides from b, [b â ¢ 0] we get, y = -\ (\frac{a}{b}\) x – \ (\frac{c}{b}\), which is the slope-intercept form. Now comparing the equation above to the slope intercept shape (y = mx + b) we get, the slope of the line axe + of + c = 0 is (- \ (\frac{a}{b}\)). Since the required line is parallel to the given line, the slope of the required line is (- \ (\frac{a}{b}\)). Let k (an arbitrary constant) be the intercept of the required straight line. the equation of the straight line is y = - \(\frac{a}{b}\) x + k ⇒ da = - ax + bk ⇒ ax + = λ, Dove λ = bk = anotherconstant. Note: (i) assigning different values to Ãžâ »in ax + by = Ãžâ» We will get different lines each parallel to the line AX + by + C = 0. Therefore, we can have a family of parallel rects at a date REDGE. (ii) to write a parallel line to a data line, we maintain the expression containing XEY itself and simply replace the constant date with a new constant Ãž.â »The value of Ãžâ» can be determined by a given condition . To make it clearer, we compare the AX + BYE equation = Ãžâ »with the EQUATION AX + BY + C = 0. It follows that to write the equation of a parallel line at a straight date we simply need to replace The constant date with an arbitrary constant, the terms with XEY remain unchanged. For example, the equation of a straight line parallel to the straight 7x â € "5Y + 9 = 0 is 7x â € â €" 5y + Ãžâ »= 0 where ÃžÂ» is an arbitrary constant. Examples resolved to find the equations of the parallel fees at a straight date: 1.Ã, find the equation of the parallel line at 5x â € "7y = 0 and through point (2, â €" 3) .solution: Ã, Ã, Ã, Ã, Ã, Ã, the equation of any straight parallel to the line 5x â € "7y = 0 Ã¨ 5x â €" 7y + Ã, Ã, Ã, Ã, Ã, Ã, Ã , Ã, Ã, Ã, Ã, Ã, Ã, Ã, Ã, is, [where Ãžâ "is an arbitrary constant]. If the line (i) passes through the point (2, â € "3) then we will have, 5 Ã ¢ âžâžâžâžâ € â € œ 7 Ã ¢ âžâžâžâžâžÂž (-3) + Ãž Â »= 0 Ã ¢ âžâžâžâž ¢ 10 + 21 + Ãžâ» = 0 Ã ¢ âžâžâžâžâžâžâ »= -31 Then, the equation of the requested right is 5x â € "7y â €" 31 = 0. 2. Find the equation of the line that passes through the point (5, â € "6) and parallel to the straight 3x â €" 2y + 10 = 0. Solution: lâ equation of any straight line parallel to the line 3x â 2y + 10 = 0 is 3x + 2y â k = 0 Â «Â¡Â¡Â¡Â¡Â¡Â¡Â¡Â¡Â ¡¡Â¡Â¡â¡â¡Â¡â¡ (i) [where K is an arbitrary constant]. Depending on the problem, the line (i) passes through the point (5, â € "6) then we will have, 3 â € ¢ âžâžâžâžâ € 5 â € ¢ Ã ¢ âžâžâžÂž (-6) + k = 0 Ã ¢ âžâžâžâžâžâžâ + 21 + k = 0 Ã ¢ âžâžâžâžâž ¢ 36 + k = 0 Ã ¢ âžÂ_k = -36 Then, the € ™ Equation of the requested list is 3x â € "2y â €" 36 = 0. Ã ¢ â - Ã, the straight 11 and 12 grade mathÃ, from the equation of a parallel line to a line to home page you do not have Found what you were looking for? Or you want to know more about Math Only Math. Please use this search on Google to find what you need. Share this page: What is it? A straight line has the equation ã ° ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ Find the equation of the recta parallel to Ã ° Â¿ 'which passes through the point (1, 3). Something went wrong. Wait a moment and try again. University Algebra Exercise 28: Parallel and Perpendicular Lines Wtamu> Virtual Mathematics Laboratory> University Algebra Training Objectives After completing this tutorial, you should be able to: find the slope of a parallel line at a straight date. Find the slope of a rectum perpendicular to a straight date. Introduction This tutorial examines the relationship between the slopes of parallel fees and perpendicular rects.ã, once again we will use material from our mathematical past to help you find the new concept. To find out how to find the slope of a line given an equation and how to write the equation of a line. If you need a review on these concepts, feel free to go to the tutorial 26: Equations of lines. Let's see what you can do with parallel and perpendicular. Parallel lines tutorials and their slopes Ã ¢ in other words, the slopes of parallel lines are the same. Note that two lines are parallel if their slopes are the same and have different yard wires. The perpendicular lines and their slopes is in other words, perpendicular slopes are mutually negative to each other. Ã, "Here is a rapid revision of the shape of the slope / interception of a line. If you need more than a review on how to use this form, feel free to go to the Tutorial 26: Equations of lines. Slope / Intercept Equation of a line Ã, if your linear equation is written in this module, M represents the slope and B represents the Y interception. This module can be useful if you need to find the slope of a line given L 'equation. Ã, Example 1: Ã, Ã, finds the slope of any line a) parallel and b) perpendicular to the line. Before we face the search for parallel and perpendicular slopes, it can really help us if we find the slope of the date line. We remind you that when you are given the equation of a line that you can find the slope of it by writing it in the SLOPE / INTERCEPT form, ã,, where M is the slope and B is the Y line interception. This equation is already written in the SLOPE / INTERCEPT module: Ã, * Written slope / shut-off form Ã, lifting the module with the equation that has been given, can you see how it is the slope? If you said -7, you're correct !!! Ã, slope of the parallel line: since the parallel lines have the same slope what do you think the slope of any line parallel to this line is? Paccati on my back If you said -7. The slope of the perpendicular line: since the slopes of the perpendicular lines are mutual negative one of the other, what do you think the slope of any line perpendicular to this line is? Ã, give yourself a high five if you said 1/7. Remember that you take the mutual who is -1/7 and then denies it to get the 1/7 for your perpendicular slope. Ã, the slope of any line parallel to the line is -7 and the slope of any line perpendicular to the line is 1/7. Ã, Ã, example 2: Ã, Ã, Ã, finds the slope of line a) parallel and b) perpendicular to the line. Before we face the search for parallel and perpendicular slopes, it can really help us if we find the slope of the date line. We remind you that when you are given the equation of a line that you can find the slope of it by writing it in the SLOPE / INTERCEPT form, ã,, where M is the slope and B is the Y line interception. Reashing this equation in the SLOPE / INTERCEPT module we obtain: Ã, * reverse of the sub. 2 / 3x is added. 2 3x â * Scritto in gradient / interception form Â Leaving the module with the equation we got, can you see how it is the slope? If you said 2/3, you are correct !!! Â Parallel slopeSince the parallel lines have the same slope, what do you think the slope of the parallel line will be? Give yourself a pat on the back if you said 2/3. Slope of the perpendicular line: Since the slopes of the perpendicular lines are reciprocally negative, what do you think the slope of the perpendicular line is?Give yourself a high five if you say -3/2. Remember you take the reciprocal which is 3/2 and then you negate it to get the -3/2 for your perpendicular slope. Ã Ã¨ The slope of the parallel line is 2/3 and the slope of the perpendicular line is -3/2. Example 3: Example 3: Example: Find the slope of the line which is a) parallel and b) parallel Perpendicular to the line. Ã© Do you remember what special type of line is this equation?Ã© Ã Ã Ã What is the slope of a vertical line?If you said indefinite, you're right. Ã Slope of the parallel line: Since the parallel lines have the same slope, what do you think the slope of the parallel line will be? Pat yourself on the back if you said indefinite. Slope of the perpendicular line: Since the slopes of the perpendicular lines are reciprocally negative, what do you think the slope of the perpendicular line is?This is a bit more complicated.Ã© The vertical and horizontal lines are perpendicular to each other.Ã The slope of the perpendicular line in this case would be the slope of a. The slope of the parallel line is undefined and the slope of the perpendicular line is 0. Example 4: Example 4: Example Find the slope of the line which is a) parallel and b) perpendicular to the line. Ã Ã Ã¨ Do you remember what special kind of line this equation is?Ã¨ Horizontal Line.Ã¨ If you need a review on horizontal lines, please visit the Tutorial 27: Graphing Lines. What is the slope of a horizontal line?If you said 0, you're right. Ã Slope of the parallel line: Since the parallel lines have the same slope, what do you think the slope of the parallel line will be? Give yourself a pat on the back if you say 0. Slope of the perpendicular line: Since the slopes of the perpendicular lines are reciprocally negative, what do you think the slope of the perpendicular line is?This is a bit more complicated.Ã© The vertical and horizontal lines are perpendicular to each other.Ã The slope of the perpendicular line in this case would be the slope of a perpendicular line The slope of the parallel line is 0 and the slope of the perpendicular line is undefined. This is a brief review of the point/inclination shape of a line.If you need a further review of how to use this module, please visit Tutorial 26: Line Equations Point/inclination shape of a line A line passing through the point and having a slope of m would have the equation that we can use to connect when we need to find a linear equation. Write an equation of a line, keep in mind that you always need two pieces of information when you go to write an equation: any point on the Slope line Once you have these two pieces of information, connect the XEY values from the point and the value of the slope (m) in the point / ride formula. Example 5: Write an equation for the line in point / slope and slope shape / interception that passes through (-2, -5) and parallel to the line. What are the two things we need to write an equation of a line ??? If you said any point on the line and the slope, you're right. Do we have a point, but what about the slope? Does this mean that we can't solve the problem? You won't go so easily. We have to do a little excavation to take our slope. As mentioned above, the parallel lines have the same slope. So if we know the slope of the parallel line to our line, we did it. We find the slope of the date line: * Slope / Intercept line of the line now keep in mind that this is not the equation of our line but a line parallel to our line. We had to write it this way, so you can take the track. And it seems that the slope is 4. Because our line is parallel to a line that has a slope of 4, our line also has a slope of 4. OK, now we have our slope, which is 4. Now It is just like problems in tutorial 26: Equations of Lines, let's put the slope and a point in the Stitch / Slope equation. POINT / PIANZA shape: * POINT / SLOPE OF THE LINE Make sure you are careful when one of your values is negative and you must subtract as we have done in line 2. y - (-5) is not the same as y - 5 EX - (-2) is not the same as X - 2. Later, we want to write it in the SLOPE / INTERCEPT module, which basically means that we need to solve for you: * Dist. 4 through () * reverse to add. 5 is sub. 5 * Slope / Interception of the line shape The equation of the line passing through (-2, -5) and is parallel to the line Ã¨ y + 5 = 4 (x + 2) or y = 4x + 3. example 6 : Write an equation for the line in point / slope form and slope shape / interception that passes through (3, 2) and perpendicular to the line. What are the two things we need to write an equation of a line ??? If you said any point on the line and the slope, you're right. Do we have a point, but what about the slope? Does this mean that we can't solve the problem? You won't go so easily. We have to do a little excavation to take our slope. As mentioned above, the slopes of perpendicular lines are negative spare parts to each other. So if we know the slope of a line perpendicular to our line, we did it. We find the slope of the date line: * reverse to add. 2x is sub. 2x * reverse Mult. of -5 is div. From -5 * Slope / Intercept Line shape now Keep that this is not the equation of our line but of the line parallel to our line. We had to write this way so we could get there.And it seems that the slope is 2 / 5.Ã, as our rectum is perpendicular to a straight line that has a slope of 2/5, our recta has a slope of -5/2 (the negative mutual of 2/5). Ok, now we have our slope, which is -5/2. Now it's just like the problems in the tutorial 26: Equations of the lines, we put the slope and a point in the point / section equation. POINT / SLOPE: Ã, * POINT / SLOPE OF THE LINE Ã, Later, we want to write it in the slope / intercepting form, which essentially means that we need to solve for Y: Ã, * DIST. -5/2 Through (Ã,) ã, * reverse of sub. 2 is added. 2 Ã, Ã, Ã, * shape slope / intercept of the line Ã, Ã, Ã, the equation of the line passing through (3, 2) and perpendicular to the lineÃ, Ã, Ã, Ã, ã, y = -5 / 2x + 19/2. Ã, Ã, problems of practice these are practical problems to help you take you to the next level., Ã, will allow you to check and see if you have the understanding of this kind of problems. Mathematics works just like anything else, if you want to get good in it, then you need to practice them. Even the best athletes and musicians have helped along the way and a lot of practice, practice, practice, to get good in their sport or instrument. In fact, there is no one like too much practice. To get the most from these, you should solve the problem yourself and then check your answer by clicking on the connection for the answer / discussion for thatã, problem .ã, to the link you will find the answer as well as all the points I went In the identification of that response. Practical problems 1a â € "1C: Ã, finds the slope of the straight line a) parallel and b) perpendicular to the straight date. Ã, (answer / discussion to 1a) 1b.ã, (answer / discussion at 1b) is, ã, (response / discussion to 1c) practical problems 2a â € "2b: ã, write an equation for the righteous in Point / slivello shape and in the slope / intercept form that has the date condition. Ã, 2a. Pass through (-7, 2) and is parallel to there ,. (answer / discussion at 2a) Ã, Ã, Ã, ã, need additional help on these topics? Ã, Ã, wtamu> virtual math lab> college algebra latest revision on February 20, 2010 by kim seward.

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