



I'm not robot



**Continue**

## Midpoint and gradient of a line worksheet

The slope (or gradient) of a line is a number that denotes the slope of the line, also commonly called rise over run. Knowledge of relevant formulas is a must for students from 6th grade to high school to solve some of these spreadsheets in pdf. This page consists of printable exercises, such as introduction to slopes, how to identify the type and count the increase and execution; find the slope using aspect ratio method, slope interception formula, and two-point formula; drawing lines through coordinates and more! Use our free spreadsheets to prove our work. Response keys are included. Print Help - Please do not print tilt worksheets directly from the browser. For a long time, download them and print. Identify Slope Types Introduction to slopes: Based on the position of the line on the chart, identify the slope type - positive, negative, zero, or undefined. This exercise is recommended for children of the 6th and 7th year. Draw lines on a chart: Slope types The first part of worksheets requires students to draw points on the chart, draw the line, and identify the type of slope. In the next section, draw a line through the single point plotted on the chart to represent the type of slope mentioned. Line chart Draw a line through a plotted point on the chart based on the slope provided in this set of pdf worksheets that is suitable for 9th graders. Fun Activity: Hillside Roof This set of fun activity spreadsheets contains houses with roofs of various sizes. Find the slope of the roof of each house. The answers must be in the form of positive inclinations. Find slope: Aspect ratio Method Use the x and y coordinates provided to find the slope (up and run) of a line using the ledger method. An example worked along with the formula is displayed at the top of each worksheet for easy reference. Find Slope: Line segments in triangles are represented in each chart in this set of 8th year printable worksheets. Students will need to identify the rise and execution of each of the three line segments that are joined together to form a triangle. Two-point formula Use the two-point formula that is featured in each worksheet, along with a worked example. Replace each pair of x and y coordinates in the given formula to find the slope of a line. Plot the Points and Find the Slope Plot the points on the chart based on the x and y coordinates provided. So find the slope of each line, so derived. Some problems contain x-and-y-interceptions as well. Find the Missing Coordinates in this series of high school PDF spreadsheets, the slope and coordinates are provided. Use the tilt formula to find the missing coordinate. Form of This set of printable worksheets presents linear equations. Students are required to find the slopes by writing linear equations in the form of slope interception. Level 4-5 Example: Find the gradient of the line shown: In general, if we have two coordinates  $(x_1, y_1)$  and  $(x_2, y_2)$  then the gradient of the line that passes through them is,  $\frac{y_2 - y_1}{x_2 - x_1}$  Positive gradient:  $y$  value increases as the value  $x$  increases. Negative gradient:  $y$  value decreases as the value  $x$  increases. Horizontal lines:  $y = a$  (constant value  $y$ ) Vertical lines:  $x = a$  (value  $x$  constant) Example: Draw the charts from  $x=1$  and  $y=2$ . When drawing such lines, find the coordinate on the correct axis, that is, for  $x=1$ , find  $(1,0)$  and draw a straight line perpendicular to that axis that results in a vertical line. Similarly for  $y=2$ , find  $(0,2)$  and draw a straight line perpendicular to that axis, which in this case is a horizontal line. Work the gradient of the straight line that passes through the points  $(2, 3)$  and  $(-10, 6)$ . Step 1: Choose one of the points and subtract its  $x$  and  $y$  coordinates from the  $x$  and  $y$  coordinates of the other point, respectively.  $y = (y_2 - y_1) = (6 - 3) = 3$   $x = (x_2 - x_1) = (-10 - 2) = -12$  Step 2: Replace in formula,  $\text{gradient} = \frac{y}{x} = \frac{3}{-12} = -\frac{1}{4}$  To do this, you want to choose 2 points on the chart by what the line passes through. It is best, if you can, to choose two points where the coordinates are easy to read. Here, we choose  $(2, 1)$  and  $(4, 5)$ , as seen in the chart. After you do this, draw the right angle triangle as depicted with dotted lines. Then the change in  $x$  is the width of the base of that triangle, while the change in  $y$  is the height. Therefore, we received  $\text{gradient} = \frac{y}{x} = \frac{4}{2} = 2$  We must find two points through which the line passes and draw a right angle triangle underneath, so that we can identify the change in  $x$  to be the basis and the change in  $y$  to be the height. This looks like now, given that this is a downward slope, it should have a negative gradient. So we have  $\text{gradient} = \frac{y}{x} = \frac{3}{-12} = -\frac{1}{4}$  Note: you could have used a different triangle at different points of the line - that's good, as long as you have the correct answer of  $-\frac{1}{4}$ . To find the gradient, we subtract the values from the second coordinate of the first, and divide the difference in the  $y$  values by the difference in the values  $x$ :  $\text{gradient} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 1}{4 - 2} = \frac{4}{2} = 2$  When drawing lines of shape  $x=a$  or  $y=b$ , find the coordinate on the correct axis and draw a perpendicular straight line to that axis. For  $y=2$ , find  $(0,2)$  and draw a straight line perpendicular to that axis that is a horizontal line. For  $x=3$ , find  $(3,0)$  and draw a perpendicular straight line this axis that is a vertical line. FreeEss this sheet contains 12 12 each with a question about gradients, distance between two points, the midpoint of two points, and so on. I usually ask my students to choose a question, cut it, then last it and answer it. Read moreFree construction a problemSee more