Stairs

This worksheet is to be used with **Stairs**, a GeoGebra-based applet on **www.MathEducation.page**.
Basic rule: *set the* **steps** *to 0*, *select* **rise** *and* **run**, *then use the* **steps** *slider to see your stairs*.
To graph a line, write its equation in the input bar in the form **f(x) = mx + b**.
Before trying the activities spelled out here, make sure you know how to use the applet.

Exploring

1. Try making various types of stairs. Write down some notes about how you do it.
   a. Some should go up (left to right), some down.
   b. Some should be steep, some not.

2. What happens when you use 0 for the **rise**? For the **run**? (For this, don't start at the origin.)

3. Make some stairs connecting two points. Now use bigger or smaller steps for the same points. Keep track of your **rise** and **run** each time!

4. Graph a line. Put the **start** point on it.
   a. Make stairs that sit on the line.
   b. Make stairs that hang below the line.

5. Make some stairs. Graph the corresponding line. (Use **f(x)** to replace the previous line.)

Challenges

6. For each challenge, use these points as **start** and **target**. Connect them with stairs and with a graphed line.
   a. (5, 4) (-10, -5)
   b. (-10, -3) (8,3)
   c. (1,-5) (5,3)
   d. (-5,-1) (9,6)

7. For each challenge, use the equation to graph a line. Make the corresponding stairs.
   a. $y = x / 3$
   b. $y = 2x - 1$
   c. $y = -3x + 2$

8. For each challenge, make the stairs and graph the line.
   a. **start:** (0,3) r**ise:** 2 r**un:** 3
   b. **start:** (2,3) r**ise:** -5 r**un:** 2

9. For each challenge, make the stairs and graph the line.
   a. **target:** (3,0) r**ise:** 3 r**un:** 2
   b. **target:** (3,2) r**ise:** 5 r**un: -**2