

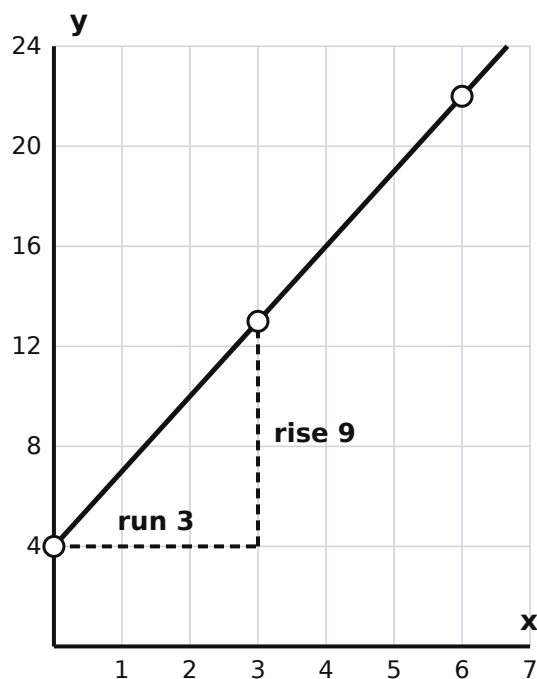
# Grade 8 - Linear Functions as Models - Test Answer Key

Common Core 8.F.B.4, 8.F.B.5 · maths-pdf.fr/en/

Use this answer key to score the linear function models test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

**Grade 8** · Common Core State Standards: **8.F.B.4, 8.F.B.5**

## Question 1 - Rate and initial value [3 pts]



Rise 9, run 3.

Rate  $\frac{13-4}{3}=3$ ; initial value 4.

$$y=3x+4$$

Scoring: 1 point for the rate, 1 point for the initial value, 1 point for the function.

## Question 2 - Two points [3 pts]

$$m=3. \ 8=3\cdot 1+b, \text{ so } b=5.$$

$$y=3x+5$$

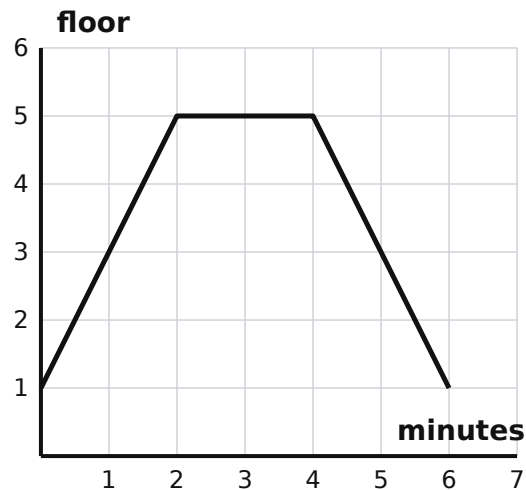
Scoring: 1 point for the slope, 1 point for  $b$ , 1 point for the equation.

### Question 3 - Interpret [2 pts]

8: dollars for each student. 40: a fixed cost that is paid no matter how many students go.

Scoring: 1 point for each meaning.

### Question 4 - Describe a graph [3 pts]



Three parts.

0 to 2 minutes: increasing. 2 to 4 minutes: constant. 4 to 6 minutes: decreasing.

Scoring: 1 point for each part.

### Question 5 - Model and predict [3 pts]

$$c=60-3m; \ c(12)=24.$$

Scoring: 1 point for the rate, 1 point for the function, 1 point for 24%.

### Question 6 - Table [2 pts]

The rate is 3 each time.  $11 = 3 \cdot 2 + b$ , so  $b = 5$ :  $y = 3x + 5$ .

*Scoring: 1 point for linear with constant rate. 1 point for the equation.*

### Question 7 - Compare [2 pts]

A:  $6 \cdot 12 + 20 = 92$ . B:  $4 \cdot 12 + 35 = 83$ .

#### Plan B

*Scoring: 1 point for each total, or 1 for both and 1 for the answer.*

### Question 8 - Linear or not [2 pts]

No. The graph is curved, so the rate of change is not constant: it gets steeper as  $x$  increases.

*Scoring: 1 point for nonlinear. 1 point for the reason.*

|                  |
|------------------|
| <b>Total</b>     |
| <b>20 points</b> |