**Task card 1** Rate of Change & Initial Value

Sam has $68 saved and adds $9 every week. What is the rate of change of the amount he has saved in dollars per week?

**Task card 2** Rate of Change & Initial Value

A phone battery is at 93% and loses 10% every hour. What is the battery level in percent after 4 hours?

**Task card 3** Rate of Change & Initial Value

The total cost in dollars changes at a constant rate. After 2 months it is 93, and after 6 months it is 177. What is the rate of change per month?

**Task card 4** Rate of Change & Initial Value

A tank holds 318 liters of water and drains 15 liters every minute. What is the initial value of the water left in liters?

**Task card 5** Rate of Change & Initial Value

A candle is 30 cm tall and burns down 2 cm every hour. What is the rate of change of the height of the candle in cm per hour?

**Task card 6** Rate of Change & Initial Value

A plumber charges $98 for a visit plus $74 per hour. What is the charge in dollars after 2 hours?

**Task card 7** Rate of Change & Initial Value

The total cost in dollars changes at a constant rate. After 1 month it is 126, and after 4 months it is 243. What is the rate of change per month?

**Task card 8** Rate of Change & Initial Value

Sam has $149 saved and adds $8 every week. What is the initial value of the amount he has saved in dollars?

**Task card 9** Rate of Change & Initial Value

A taxi ride costs $3 plus $4 per mile. What is the rate of change of the fare in dollars per mile?

**Task card 10** Rate of Change & Initial Value

A taxi ride costs $3 plus $2 per mile. What is the fare in dollars after 6 miles?

**Task card 11** Rate of Change & Initial Value

The height of the candle in cm changes at a constant rate. After 4 hours it is 27, and after 7 hours it is 24. What is the rate of change per hour?

**Task card 12** Rate of Change & Initial Value

A candle is 37 cm tall and burns down 2 cm every hour. What is the initial value of the height of the candle in cm?

**Task card 13** Rate of Change & Initial Value

A gym charges a $61 sign-up fee plus $41 per month. What is the rate of change of the total cost in dollars per month?

**Task card 14** Rate of Change & Initial Value

A candle is 32 cm tall and burns down 2 cm every hour. What is the height of the candle in cm after 5 hours?

**Task card 15** Rate of Change & Initial Value

The battery level in percent changes at a constant rate. After 1 hour it is 85, and after 3 hours it is 73. What is the rate of change per hour?

**Task card 16** Rate of Change & Initial Value

A candle is 35 cm tall and burns down 2 cm every hour. What is the initial value of the height of the candle in cm?

**Task card 17** Rate of Change & Initial Value

The battery level in percent changes at a constant rate. After 4 hours it is 61, and after 8 hours it is 29. What is the rate of change per hour?

**Task card 18** Rate of Change & Initial Value

The battery level in percent changes at a constant rate. After 4 hours it is 62, and after 7 hours it is 41. What is the initial value (when $x = 0$)?

**Task card 19** Rate of Change & Initial Value

A phone battery is at 93% and loses 8% every hour. Write an equation for y, the battery level in percent, after x hours.

**Task card 20** Rate of Change & Initial Value

The amount he has saved in dollars changes at a constant rate. After 4 weeks it is 209, and after 8 weeks it is 285. What is the rate of change per week?

**Task card 21** Rate of Change & Initial Value

The charge in dollars changes at a constant rate. After 4 hours it is 247, and after 8 hours it is 379. What is the initial value (when x = 0)?

**Task card 22** Rate of Change & Initial Value

A tank holds 565 liters of water and drains 13 liters every minute. Write an equation for y, the water left in liters, after x minutes.

**Task card 23** Rate of Change & Initial Value

A taxi ride costs $6 plus $4 per mile. What is the rate of change of the fare in dollars per mile?

**Task card 24** Rate of Change & Initial Value

A phone battery is at 94% and loses 9% every hour. What is the battery level in percent after 5 hours?

# Rate of Change & Initial Value Task Cards

Recording sheet · Grade 8 · Answer each question. A rate of change is negative when the quantity decreases. Give numbers only, without units.

Name: _____ Date: _____

Scan to check your answers

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 |

# Rate of Change & Initial Value Task Cards: Answer Key

Grade 8 · Easy

The answers online

| | | |
|---|---|---|
| **1.** 9 | **2.** 53 | **3.** 21 |
| **4.** 318 | **5.** -2 | **6.** 246 |
| **7.** 39 | **8.** 149 | **9.** 4 |
| **10.** 15 | **11.** -1 | **12.** 37 |
| **13.** 41 | **14.** 22 | **15.** -6 |
| **16.** 35 | **17.** -8 | **18.** 90 |
| **19.** y = -8x + 93 | **20.** 19 | **21.** 115 |
| **22.** y = -13x + 565 | **23.** 4 | **24.** 49 |