

1. Saves \$20 each week: linear or exponential?

Fixed amount

Answer: linear

2. Grows 5% each year: which?

Fixed percent

Answer: exponential

3. Table 3, 6, 9, 12: model?

+3 each

Answer: linear

4. Table 3, 6, 12, 24: model?

x2 each

Answer: exponential

5. Write the model: start 100, +15 each month.

$m = 15$, $b = 100$

Answer: $y = 15x + 100$

6. Write the model: start 100, x1.5 each month.

$a = 100$, $b = 1.5$

Answer: $y = 100(1.5)^x$

7. A car loses 12% of value yearly from \$20,000. Model type and equation?

Percent decay

Answer: exponential; $y = 20000(0.88)^x$

8. Which grows more after 20 steps: +50 each step from 100, or x1.1 each step from 100?

Linear: 1100; exp: $100(1.1^{20}) \sim 673$

At 20 exp still behind - but catches up later

Answer: linear at step 20 (exp overtakes later)

9. Data (0,5),(1,15),(2,45),(3,135). Model type, and write the equation. ★ challenge

Ratio x3

$a = 5$, $b = 3$

Answer: exponential; $y = 5(3)^x$

10. Two plans reach \$500: A is $100 + 40x$ (linear), B is $100(1.35)^x$. Estimate which hits \$500 in fewer steps.

A: $40x = 400$, $x = 10$

B: $1.35^x = 5$, $x \sim 5.4$

Answer: B (about 6 vs 10 steps)