

1. A pool has 200 gal and fills at 15 gal/min. Write the equation.

$$b = 200, m = 15$$

Answer: $y = 15x + 200$

2. Same pool: how much water after 10 min?

$$15(10) + 200$$

Answer: 350 gal

3. A tank holds 500 gal and drains 25 gal/min. Equation?

Draining = negative rate

Answer: $y = -25x + 500$

4. Same tank: when is it empty?

$$0 = -25x + 500$$

Answer: 20 min

5. Taxi: \$3 flag + \$2 per mile. Cost for 7 miles?

$$3 + 2(7)$$

Answer: \$17

6. Savings: start \$40, add \$12 per week. When do you reach \$124?

$$124 = 12x + 40$$

$$12x = 84$$

Answer: 7 weeks

7. Plant: 5 cm tall, grows 2 cm/week. Height after w weeks? After 8?

$$h = 2w + 5$$

$$2(8) + 5$$

Answer: $h = 2w + 5$; 21 cm

8. A phone loses 8% battery per hour from 100%. Equation and battery after 6 hr?

$$y = -8x + 100$$

$$-48 + 100$$

Answer: 52%

9. A candle: 9 in after 2 hr, 6 in after 4 hr. Find the rate, the start height, and the equation. ★ challenge

$$m = (6-9)/(4-2) = -1.5$$

$$9 = -1.5(2) + b, b = 12$$

Answer: $y = -1.5x + 12$; started 12 in

10. Bus A leaves with 45 riders, gains 3 per stop. Bus B leaves with 60, gains none. After which stop does

$$45 + 3s > 60$$

$$3s > 15, s > 5$$

Answer: after stop 5 (at stop 6)