Solutions

2.1

- Second crate: $60 - 52 =$ **8 carrots**.
- Fourth crate: $30 - 16 =$ **14 carrots**.
- The costs rise (8, 10, 12, 14, 16) – increasing opportunity cost.
- Each later crate displaces ground better suited to carrots.

2.2

- (2, 40): **inside** – the frontier offers 42 at 2 crates, so hours sit idle.
- (3, 35): **beyond** – 3 crates allow at most 30.
- (1, 52): **on** – exactly the frontier's second point.

2.3

- New third-crate cost: $50 - 37 =$ **13 carrots**.
- Against the old cost of 12 carrots.
- Growth shifted the frontier out but scarcity remains – the third crate still costs carrots, and more than before.

2.4

- Net benefit of the cake: $45 - 8 =$ £37.
- Opportunity cost: 8 loaves $\times$ £4 = £32.
- £37 $>$ £32, so **bake it**.
- The margin is £5.

2.5

- Net benefit: $50 - 6 =$ £44.
- Opportunity cost: the third cake costs $47 - 30 = 11$ loaves $\times$ £4 = **£44**.
- Benefit equals cost exactly: Nimbus is **indifferent**.
- The offer prices the cake at precisely its opportunity cost.
- That is the boundary of the bake / don't-bake rule.

2.6

- (a) False – the flour is sunk; the cost is the forgone loaves.
- (b) False – a straight frontier has constant cost.
- (c) True – all on-curve points use resources fully; choosing among them is preference, not efficiency.