Brightening Sun
and Decreasing Heat
(Answers)

**Algebra**

**Unit 2 Line Master 4d**

**Brightening Sun**

1.

|  |  |
| --- | --- |
| **Number of minutes since Sun was released** | **Number of units of brightness** |
| 1 | 9 |
| 2 | 15 |
| 3 | 21 |
| 4 | 27 |
| 5 | 33 |
| 10 | 63 |

2. For each additional minute since Sun was released, the number of units
of brightness increases by 6.

3. Let *m* represent the number of minutes since Sun was released and *b* represent the number of units of brightness: *b* = 6*m* + 3

4. The constant in the model is the hexagon. This is the + 3 in the equation.

5. The model would have only the hexagon.

6. *b* = 6(16) + 3 = 99; the number of units of brightness would be 99 units.

7. If the number of units of brightness increased by 6 every 0.5 min, then they would increase by 12 every minute. Then, the equation is *b* = 12*m* + 3 represents the number of units of brightness after *m* minutes.

Brightening Sun
and Decreasing Heat
(Answers) (cont’d)

**Algebra**

**Unit 2 Line Master 4e**

**Decreasing Heat**

1.

|  |  |
| --- | --- |
| **Number of hours since Sun was taken** | **Temperature (°C)** |
| 0 | 15 |
| 1.5 |  11.25 |
| 3 |  7.5 |
| 4.5 |  3.75 |
| 6 |  0 |
| 9 |  −7.5 |

2. For every 1.5 h since Sun was taken, the temperature decreases by 3.75°C.

3. Let *h* represent the number of hours since Sun was taken, and *t* represent the temperature. For every 3 h, the temperature decreases by 7.5°C.
So it decreases by 7.5°C ÷ 3 *h* = 2.5°C/*h*.
Equation: *t* = 15 – 2.5*h*

4. a) *t* = 15 – 2.5(5) = 2.5; 2.5°C

 b) *t* = 15 – 2.5(24) = –45; −45°C

5. From the table, it will take 6 h for the temperature to reach the freezing point, 0°C.