Answers - Place value to 1 000 000

Year: Year 5

Answer to Question 1

a. **Three hundred and forty-five thousand six hundred and seventy-eight**.
b. **Two hundred and seven thousand and fifty-nine**.
c. **Nine hundred and eighty thousand and four**.
d. **708,061**. Seven hundred and eight thousand is 708,000, then add sixty-one.

Answer to Question 2

a. The 6 is in the thousands column, so its value is **6,000**.
b. The 5 is in the hundred-thousands column: **500,000**.
c. The 8 is in the tens column: **80**.
d. The digit in the thousands column is **6**.
e. 506,283 + 10,000 = **516,283**. Only the ten-thousands digit changes (0 becomes 1).

Answer to Question 3

a. The missing part is the hundreds: **300**.
b. The digit in the ten-thousands column is 3, so **30,000**.
c. There are 4 hundreds: **400**.
d. 600,000 + 4,000 + 30 + 8 = **604,038**. There are no ten-thousands, hundreds, so we put zeros there.

Answer to Question 4

a. 456,789 < 456,798. The digits agree until the tens column, where 8 is less than 9.
b. 120,300 > 102,300. Both have six digits. The ten-thousands digits are 2 and 0, so 120,300 is bigger.
c. 999,999 < 1,000,000. 999,999 has six digits and 1,000,000 has seven digits.
d. 78,450 = 78,450. The two numbers are the same.

Answer to Question 5

a. **48,025, 48,205, 48,250, 408,025, 480,250**. The five-digit numbers come first, then the six-digit ones.

b. **480,250, 408,025, 48,250, 48,205, 48,025**.
c. **408,025** has the 4 in the hundred-thousands column.

Answer to Question 6

a. 37,461: look at the next digit to the right, then round. **37,460**.
b. 37,461: look at the next digit to the right, then round. **37,500**.
c. 37,461: look at the next digit to the right, then round. **37,000**.
d. 564,338: look at the next digit to the right, then round. **560,000**.
e. 250,500: look at the next digit to the right, then round. **251,000**.

Answer to Question 7

a. The biggest crowd was Eastway United: **fifty-one thousand, seven hundred and thirty**.
b. **39,905, 48,250, 48,520, 51,730**.
c. 48,250 → **48,000**; 51,730 → **52,000**; 48,520 → **49,000**; 39,905 → **40,000**.
d. 60,000 − 51,730 = **8,270 empty seats**.

Answer to Question 8

a. Dunmere, with **87,654** people.
b. 123,456 → **120,000**; 98,760 → **100,000**; 250,090 → **250,000**; 87,654 → **90,000**.
c. 98,760 rounds to 100,000, so it is **Brookvale**. (Dunmere rounds to 90,000 and Ashford Bay to 120,000.)
d. 250,090 + 100,000 = **350,090**.

Answer to Question 9

a. The step is 10,000: **255,000** and **275,000**.
b. The step is 100,000: **350,000** and **550,000**.
c. Subtract 1,000 each time: **70,500** and **68,500**.
d. Add 25,000 each time: **75,000** and **100,000**.

Answer to Question 10

a. Moscow, at **−12°C**.
b. −12, −8, −3, 4, 9 (°C): **Moscow, Oslo, Reykjavik, London, Madrid**.
c. 4 + 6 = **10°C**.
d. −8 − (−12) = **4 degrees**: from −12 up to −8 is 4 steps.

Answer to Question 11

a. 14 = X + IV = **XIV**. 49 = XL + IX = **XLIX**. 90 = **XC**.
b. CDXLIV = 400 + 40 + 4 = **444**. MLXVI = 1,000 + 50 + 10 + 6 = **1,066**.
c. XXVII = 10 + 10 + 5 + 1 + 1 = **27**.
d. MDCCCXC = 1,000 + 500 + 300 + 90 = **1,890**.

Answer to Question 12

a. 46,382 + 10,000 = **56,382 miles**.
b. The hundreds digit is 3, so round down: **46,000 miles**.
c. The next multiple of 10,000 above 46,382 is **50,000 miles**.
d. 50,000 − 46,382 = **3,618 miles**.

Answer to Question 13

a. The most downloads: **Star Racer** with 672,000.
b. 672,000 → **700,000**; 409,500 → **400,000**; 611,250 → **600,000**; 98,700 → **100,000**.
c. **Moon Jump** (409,500 rounds to 400,000).
d. 672,000 − 98,700 = **573,300**.

Answer to Question 14

a. Hundred-thousands 3; ten-thousands 6 (twice 3); thousands 2 (6 − 4); hundreds 3; tens 0; ones 0.
b. The number is **362,300**: three hundred and sixty-two thousand, three hundred.
c. The thousands digit is 2, so round down: **360,000**.
d. 10,000 more than 362,300 is 372,300, so **Jay is right**: only the ten-thousands digit goes up by one (6 to 7).

Answer to Question 15

a. Add: 12,480 + 15,920 + 9,875 + 21,305 + 18,650 = **78,230 tickets**.
b. 78,230: the thousands digit is 8, so round to **80,000**.
c. 80,000 − 78,230 = 1,770. They sold **1,770 fewer** than 80,000, so no profit.
d. Week 2 has 15,920, which rounds to 16,000, so **Week 2**.
e. 78,230 + 100,000 = **178,230**.

Answer to Question 16

a. **Kilimanjaro 5,895; Mount Elbrus 5,642; Mont Blanc 4,808; Matterhorn 4,478; Ben Nevis 1,345**.
b. 4,808 → **4,800**; 5,895 → **5,900**; 5,642 → **5,600**; 4,478 → **4,500**; 1,345 → **1,300**.
c. 5,895 − 1,345 = **4,550 m**.
d. Eight thousand, eight hundred and forty-nine; to the nearest 1,000 it is **9,000 m**.
e. To the nearest 1,000: Mont Blanc 5,000, Kilimanjaro 6,000, Elbrus 6,000, Matterhorn 4,000, Ben Nevis 1,000. **Kilimanjaro and Mount Elbrus** both give 6,000.

Answer to Question 17

a. Put the digits in order, biggest first: **975,310**: nine hundred and seventy-five thousand, three hundred and ten.
b. The smallest digit that can start is 1, then 0, then the rest in order: **103,579**.
c. Start with 5, then use the smallest remaining digits in order: 0, 1, 3, 7, 9. The number is **501,379**, only 1,379 above 500,000. Below 500,000 the number would have to start with 3 (there is no digit 4), and 397,510 is more than 100,000 away.
d. The hundred-thousands digit is 9 and the ten-thousands digit is 7, so round up to **1,000,000**.
e. 975,310 − 103,579 = **871,731**.

Answer to Question 18

a. 62,430 → **60,000**; 58,990 → **60,000**; 74,310 → **70,000**; 65,000 → **70,000**.
b. **North Park and Riverside** both show 60,000; **Castle Ground and Park Arena** both show 70,000.
c. The smallest is **65,000** (the 5 in the thousands column rounds up).
d. The largest is **74,999**.
e. The new capacity is 65,000 + 5,000 = 70,000. Before, 65,000 rounded up to 70,000, and now 70,000 is already a multiple of 10,000. So the poster number **stays at 70,000**.

Answer to Question 19

a. 2,000 m: 2 − 6 = **−4°C**. 3,000 m: −4 − 6 = **−10°C**.
b. **−10°C**.
c. At 4,000 m: −10 − 6 = −16°C. The drop is 8 + 16 = **24 degrees**.
d. At 3,000 m the temperature is exactly −10°C, not below. At 4,000 m it is −16°C, so it first drops below −10°C **above 3,000 m**.

Answer to Question 20

a. To the nearest 10 gives 450,000, so the number is from 449,995 to 450,004. To the nearest 1,000 gives 450,000, so the number is from 449,500 to 450,499. Both are true for 449,995 to 450,004: **smallest 449,995, largest 450,004**.
b. 449,000 is 1,000 away from 450,000, but rounding to the nearest 10 changes a number by at most 5.
c. From 449,995 to 450,004 inclusive: 450,004 − 449,995 + 1 = **10 numbers**.