

# PRACTICE EXAM 23: EQAO GRADE 3 MATH SIMULATION (40 QUESTIONS)

---

## STAGE 1 — Questions 1–10

1. A museum sold 514 tickets on Friday and 287 tickets on Saturday. How many tickets did the museum sell across both days?

- A. 227
- B. 791
- C. 801
- D. 711

2. What number is shown in expanded form as  $100 + 70 + 8$ ?

- A. 1,708
- B. 187
- C. 1,078
- D. 178

3. Round the number 432 to the nearest ten.

- A. 430
- B. 440
- C. 400
- D. 500

4. A pizza is cut into 5 equal slices. Tara ate 3 slices. What fraction of the pizza did Tara eat?

- A.  $\frac{2}{5}$
- B.  $\frac{3}{5}$

C.  $\frac{5}{3}$

D.  $\frac{3}{2}$

5. A class collected 56 caterpillars for a science experiment. They placed equal groups of 7 in each habitat. How many habitats are there?

A. 49 habitats

B. 56 habitats

C. 7 habitats

D. 8 habitats

6. Skip count by 4s starting from 20. What is the fifth number you say?

A. 32

B. 36

C. 40

D. 28

7. A bakery had 825 cookies. They sold 374 cookies. How many cookies are left?

A. 451

B. 1,199

C. 559

D. 461

8. Which expression has the same value as  $4 \times 5$ ?

A.  $4 + 5$

B.  $5 + 5 + 5 + 5$

C. 45

D.  $4 + 4$

9. A school choir has 6 rows. Each row has 9 singers. How many singers are in the choir in total?

- A. 15 singers
- B. 6 singers
- C. 54 singers
- D. 9 singers

10. Which fraction is equivalent to  $\frac{3}{12}$ ?

- A.  $\frac{3}{24}$
- B.  $\frac{6}{12}$
- C.  $\frac{12}{3}$
- D.  $\frac{1}{4}$

**STAGE 2 — Questions 11–20**

11. Compare the two numbers. Which symbol makes the statement true?

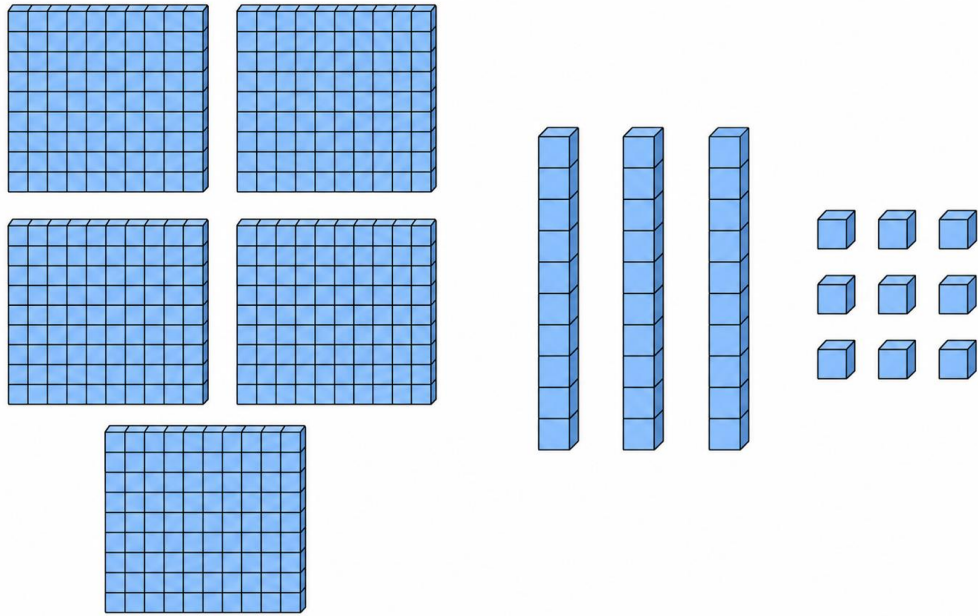
$$692 \text{ \_\_\_ } 926$$

- A.  $>$
- B.
- C.  $=$
- D.  $\geq$

12. Noah has 4 toonies, 2 loonies, 6 quarters, and 4 dimes. How much money does Noah have in total?

- A. \$11.90
- B. \$11.40
- C. \$10.90
- D. \$12.40

13. Look at the base-ten blocks below. What number do they represent?



- A. 359
- B. 935
- C. 539
- D. 593

14. What is  $45 \div 9$ ?

- A. 45
- B. 9
- C. 36
- D. 5

15. Find the missing number in this pattern: 6, 12, 18, 24, \_\_\_\_, 36.

- A. 30
- B. 32
- C. 33

D. 28

16. What is the rule for this pattern: 64, 56, 48, 40, 32, 24 ?

A. Start at 64 and add 8 each time

B. Start at 64 and divide by 2 each time

C. Start at 64 and subtract 8 each time

D. Start at 64 and multiply by 2 each time

17. Solve for n in the equation:  $5 \times n = 30$ .

A. 25

B. 6

C. 35

D. 5

18. A robot starts at 80. It follows this code:

REPEAT 4 TIMES: Subtract 15.

What is the final value?

A. 65

B. 35

C. 5

D. 20

19. Which equation is TRUE?

A.  $6 \times 4 = 12 \times 2$

B.  $14 + 6 = 14 \times 6$

C.  $18 \div 2 = 18 - 2$

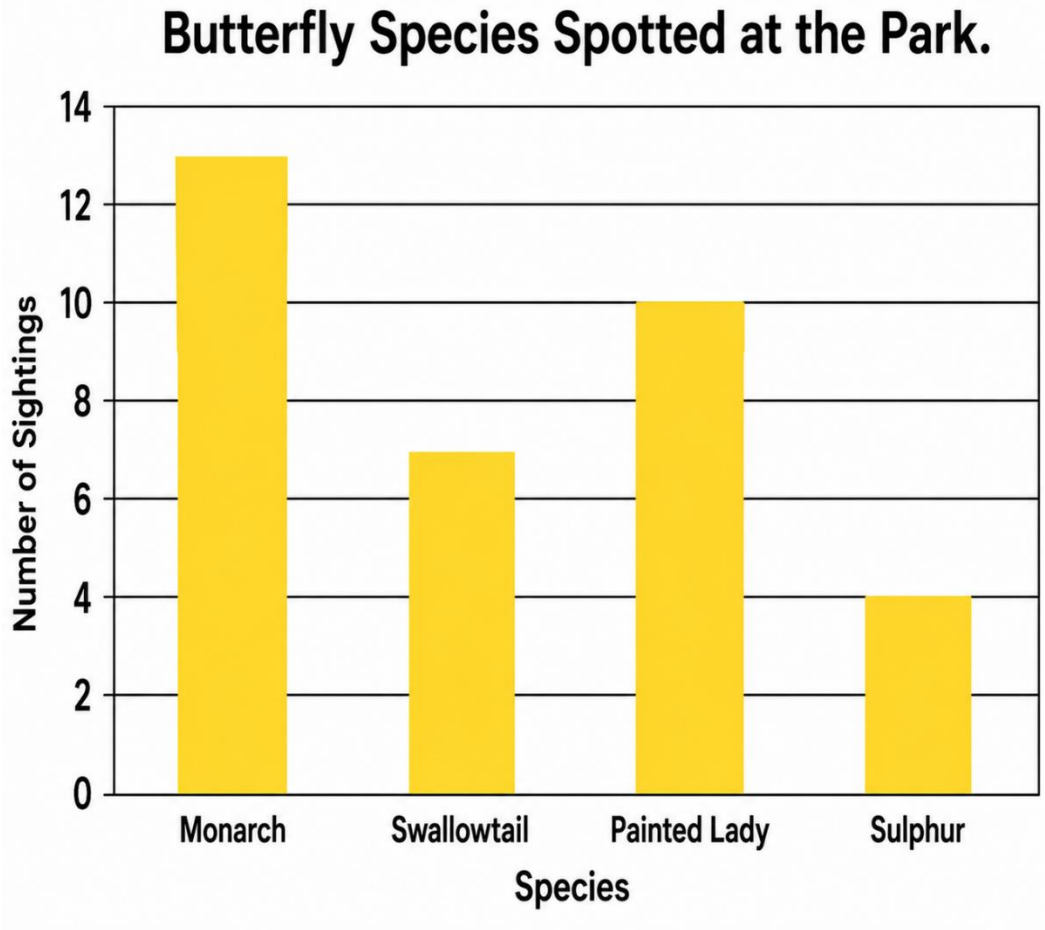
D.  $9 + 3 = 9 \times 3$

20. A teacher has 60 stickers to give out equally to 6 students. How many stickers does each student receive?

- A. 6 stickers
- B. 12 stickers
- C. 10 stickers
- D. 54 stickers

**STAGE 3 — Questions 21–30**

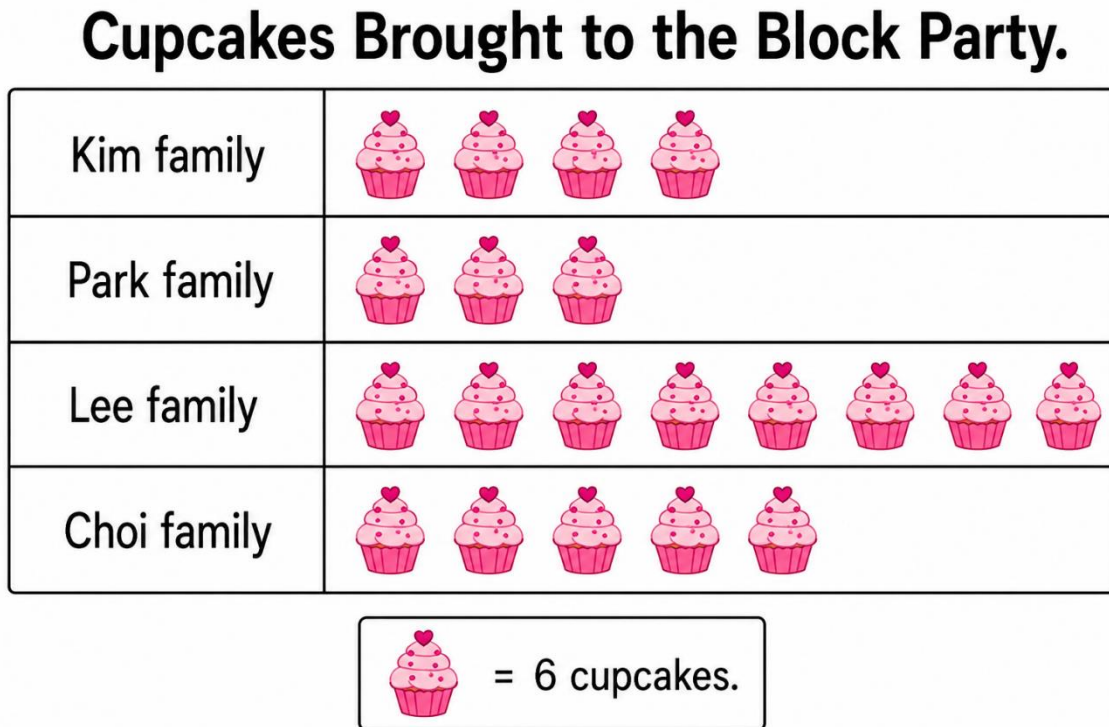
21. Look at the bar graph below. Which species had the most sightings?



- A. Monarch
- B. Sulphur
- C. Painted Lady

D. Swallowtail

22. Look at the pictograph below. Each cupcake icon stands for 6 cupcakes. How many cupcakes did the Lee family bring to the block party?



- A. 18 cupcakes
- B. 24 cupcakes
- C. 30 cupcakes
- D. 42 cupcakes

23. Find the mean of this data set: 9, 5, 11, 13, 7.

- A. 11
- B. 13
- C. 9
- D. 5

24. Find the mode of this data set: 7, 12, 7, 9, 7, 14, 12, 7, 9.

- A. 12
- B. 7
- C. 9
- D. 14

25. A jar contains 9 grape candies and 1 cherry candy. Drawing a grape candy is:

- A. Likely
- B. Impossible
- C. Equally likely
- D. Unlikely

26. Look at the frequency table below. How many more students chose hot chocolate than apple cider?

### **Warm Drink Preferences – Winter Survey**

<b>Drink</b>	<b>Number of Students</b>
Hot Chocolate	17
Tea	9
Apple Cider	8
Milk	6

- A. 17 students
- B. 9 students

- C. 8 students
- D. 25 students

27. A spinner has 6 equal sections. 3 are green, 2 are red, and 1 is yellow. Landing on green is:

- A. Impossible
- B. Unlikely
- C. Equally likely to landing on red OR yellow combined
- D. Certain

28. Look at the bar graph in Figure PQ-2 again. How many butterflies were spotted in total (all four species combined)?

- A. 23 butterflies
- B. 34 butterflies
- C. 30 butterflies
- D. 40 butterflies

29. The table below shows the number of snacks each class brought to a snack-rotation day. What is the total number of snacks?

## Snack-Rotation Day – Snacks Brought by Class.

Class	Snacks Brought
Class 1	16
Class 2	23
Class 3	9
Class 4	12
Class 5	20

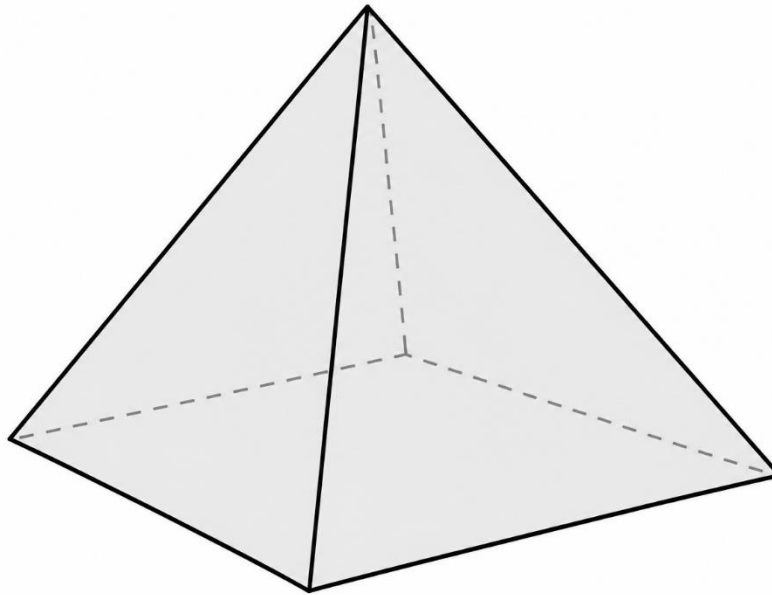
- A. 80 snacks
- B. 75 snacks
- C. 85 snacks
- D. 70 snacks

30. A weather forecast says there is a 0% chance of snow this summer in Toronto. Snow this summer is:

- A. Likely
- B. Equally likely
- C. Certain
- D. Impossible

**STAGE 4 — Questions 31–40**

31. Look at the 3D shape below. How many vertices does it have?



- A. 4 vertices
- B. 6 vertices
- C. 8 vertices
- D. 5 vertices

32. Which 3D shape has exactly 2 identical triangular bases connected by 3 rectangular side faces?

- A. Triangular pyramid
- B. Triangular prism
- C. Cube
- D. Square pyramid

33. A rectangle has a length of 11 cm and a width of 8 cm. What is its perimeter?

- A. 38 cm
- B. 19 cm
- C. 88 cm
- D. 30 cm

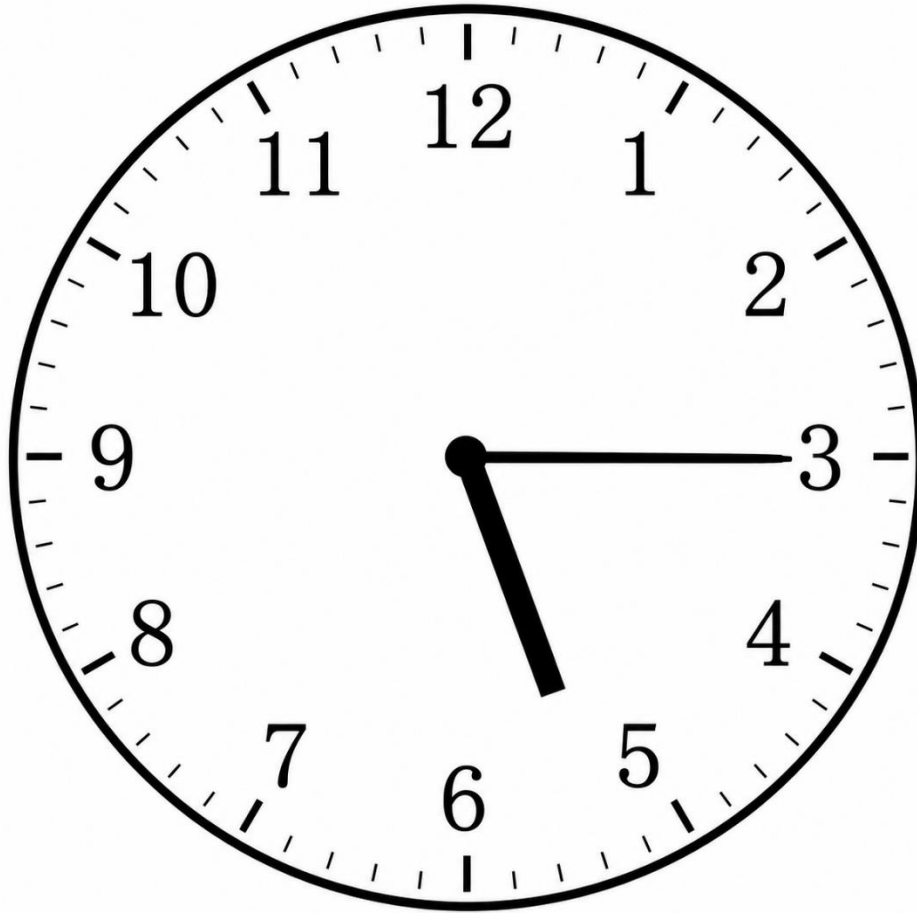
34. A character is facing south. The character makes one quarter-turn to the left. Which direction is the character facing now?

- A. South
- B. North
- C. East
- D. West

35. Which unit is best for measuring the capacity of a tea cup?

- A. Litres
- B. Grams
- C. Kilograms
- D. Millilitres

36. Look at the analog clock below. What time is shown?

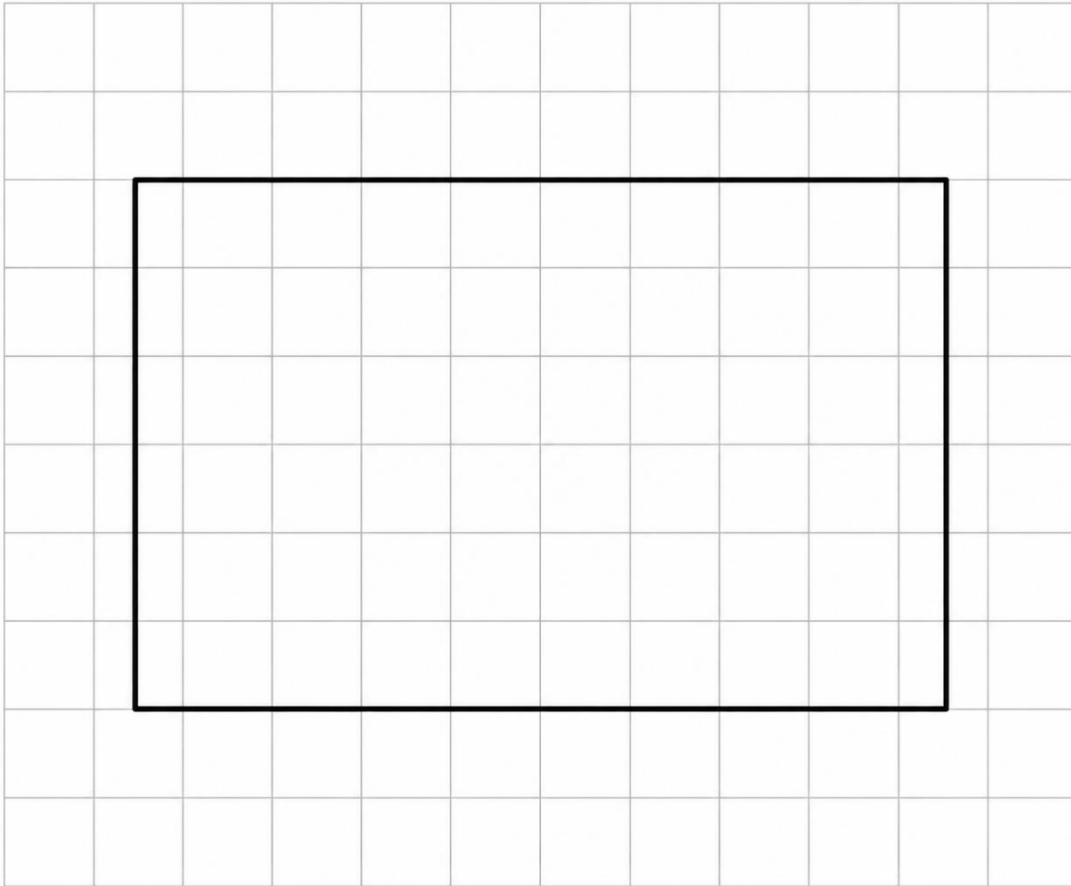


- A. 3:25
- B. 5:15
- C. 6:15
- D. 5:03

37. A class trip starts at 8:40 AM and ends at 11:25 AM. How long is the class trip?

- A. 2 hours 45 minutes
- B. 3 hours
- C. 45 minutes
- D. 2 hours 15 minutes

38. Look at the rectangle drawn on the grid below. What is its area?



- A. 16 square centimetres
- B. 32 square centimetres
- C. 63 square centimetres
- D. 54 square centimetres

39. A pool holds 200 litres of water. How many millilitres is that?

- A. 2,000 mL
- B. 20,000 mL
- C. 20 mL
- D. 200,000 mL

40. A regular hexagon has 6 sides of equal length. If each side is 5 cm, what is the perimeter?

- A. 11 cm

- B. 30 cm
- C. 24 cm
- D. 36 cm

## Practice Exam 23: Answer Key and Explanations

- 1. C — 801.** Add using the standard algorithm:  $514 + 287 = 801$ . Ones:  $4 + 7 = 11$  (write 1, carry 1). Tens:  $1 + 1 + 8 = 10$  (write 0, carry 1). Hundreds:  $1 + 5 + 2 = 8$ . Estimation check:  $510 + 290 = 800$ , close to 801. This tests addition with regrouping in two places (curriculum expectation B2.5).
- 2. D — 178.** Expanded form  $100 + 70 + 8$  represents 1 hundred + 7 tens + 8 ones, which combines to 178. Read place-value parts left to right: the hundreds (100), the tens (70), and the ones (8). Translating between expanded and standard form is a core place-value skill from Chapter 1.1.
- 3. A — 430.** To round 432 to the nearest ten, look at the ones digit: 2. Since 2 is less than 5, round down. The number 432 rounds down to 430. The midpoint between 430 and 440 is 435, and 432 is before that midpoint — confirming the rounding decision (Chapter 1.5).
- 4. B —  $\frac{3}{5}$ .** The pizza has 5 equal slices (denominator = 5) and Tara ate 3 of them (numerator = 3). The fraction representing what she ate is  $\frac{3}{5}$ . Always identify the total parts (denominator) and the counted parts (numerator) carefully (Chapter 2.1).
- 5. D — 8 habitats.** Divide the total caterpillars by the group size:  $56 \div 7 = 8$  habitats. This is grouping division — separating 56 caterpillars into groups of 7 produces 8 habitats. The related multiplication:  $8 \times 7 = 56$  confirms the answer (Chapter 4.4).
- 6. C — 40.** Skip count by 4s starting from 20: 20 is the start, then 24 (1st), 28 (2nd), 32 (3rd), 36 (4th), 40 (5th). The fifth number said after 20 is 40. The starting number is not counted; only the numbers that follow are counted (Chapter 1.6).
- 7. A — 451.** Subtract using the standard algorithm:  $825 - 374 = 451$ . Ones:  $5 - 4 = 1$ . Tens:  $2 < 7$ , regroup.  $12 - 7 = 5$ . Hundreds:  $7 - 3 = 4$ . Estimation check:  $830 - 370 = 460$ , close to 451. This tests subtraction with single regrouping in the tens place (Chapter 3.3).
- 8. B —  $5 + 5 + 5 + 5$ .** Multiplication  $4 \times 5$  means "four groups of five," which equals  $5 + 5 + 5 + 5 = 20$ . The repeated-addition form is the exact equivalent of multiplication. The other options ( $4 + 5 = 9$ ; 45 as a number;  $4 + 4 = 8$ ) all produce different values (Chapter 4.1).
- 9. C — 54 singers.** Use the ratio 9 singers per row  $\times$  6 rows = 54 singers. This is a 1-to-9 scaling problem connecting Chapter 4 multiplication to a real-world layout. Always identify the per-unit value first, then multiply by the count (Chapter 4.6).

**10. D — 1/4.** The fourths-and-twelfths family of equivalent fractions:  $3/12 = 1/4$ . Splitting one fourth into three smaller equal pieces produces twelfths, and 3 of those twelfths equal  $1/4$ . Verify:  $3 \div 3 = 1$  and  $12 \div 3 = 4$ , giving  $1/4$ . The other options ( $3/24$ ,  $6/12$ ,  $12/3$ ) all represent different amounts (Chapter 2.3).

**11. B — <.** Compare 692 and 926 starting from the hundreds place:  $6 < 9$ , so 692 is already less than 926 just from the hundreds place. The "less than" symbol ( $<$ ) opens toward the larger number on the right. Always compare place by place starting from the leftmost (Chapter 1.4).

**12. A — \$11.90.** Add Noah's money: 4 toonies = \$8.00; 2 loonies = \$2.00; 6 quarters = \$1.50; 4 dimes = \$0.40. Total:  $\$8.00 + \$2.00 + \$1.50 + \$0.40 = \$11.90$ . Sort coins from largest to smallest denomination before adding to reduce counting errors (Chapter 5.2).

**13. C — 539.** Count the base-ten blocks: 5 hundred-flats = 500; 3 ten-rods = 30; 9 unit-cubes = 9. Total:  $500 + 30 + 9 = 539$ . Always count hundreds first, then tens, then ones. The place-value composition: 5 hundreds + 3 tens + 9 ones = 539 (Chapter 1.3).

**14. D — 5.** Division  $45 \div 9$  asks "9 times what equals 45?" From the 9 times table:  $9 \times 5 = 45$ , so  $45 \div 9 = 5$ . The related multiplication confirms the quotient:  $5 \times 9 = 45 \checkmark$  (Chapter 4.2).

**15. A — 30.** The pattern increases by 6 each step (the 6 times table): 6, 12, 18, 24, 30, 36. To verify:  $12 - 6 = 6$ ,  $18 - 12 = 6$ , all consistent. The missing term between 24 and 36 is  $24 + 6 = 30$ . Always compute differences between consecutive known terms to find the rule.

**16. C — Start at 64 and subtract 8 each time.** The pattern values are 64, 56, 48, 40, 32, 24 — each term is 8 less than the previous. Differences:  $56 - 64 = -8$ ,  $48 - 56 = -8$ , all consistent. A complete pattern rule names both the starting value and the operation (Chapter 6.3).

**17. B — 6.** Solve  $5 \times n = 30$  by thinking: "5 times what equals 30?" From the 5 times table:  $5 \times 6 = 30$ , so  $n = 6$ . Check by substituting:  $5 \times 6 = 30 \checkmark$ . Either think of the multiplication fact or use the inverse:  $n = 30 \div 5 = 6$  (Chapter 7.4).

**18. D — 20.** Trace the code: the loop subtracts 15 four times. Starting at 80:  $80 \rightarrow 65 \rightarrow 50 \rightarrow 35 \rightarrow 20$ . Or compute directly:  $4 \times 15 = 60$  subtracted from 80 gives 20. Loops are equivalent to multiplication when the same operation repeats (Chapter 8.2).

**19. A —  $6 \times 4 = 12 \times 2$ .** Compute both sides:  $6 \times 4 = 24$  and  $12 \times 2 = 24$ . Both sides equal 24, so the equation is TRUE. The other options are all false:  $14 + 6 = 20 \neq 84$ ;  $18 \div 2 = 9 \neq 16$ ;  $9 + 3 = 12 \neq 27$ . The equals sign requires both sides to have the same value (Chapter 7.2).

**20. C — 10 stickers.** Divide the total stickers by the number of students:  $60 \div 6 = 10$  stickers per student. This is sharing division — distributing 60 stickers equally to 6 students. The related multiplication:  $10 \times 6 = 60$  confirms the answer (Chapter 4.4).

**21. A — Monarch.** Read the bar graph values: Monarch = 13, Swallowtail = 7, Painted Lady = 10, Sulphur = 4. The tallest bar represents the most sightings, which is Monarch with 13. Always trace from the top of each bar horizontally to the y-axis to read precise values (Chapter 9.5).

**22. D — 42 cupcakes.** Read the pictograph: the Lee family row has 7 cupcake icons. The key states each icon = 6 cupcakes, so multiply:  $7 \times 6 = 42$  cupcakes. Many-to-one correspondence means each picture represents more than one item — always check the key (Chapter 9.4).

**23. C — 9.** Add all values:  $9 + 5 + 11 + 13 + 7 = 45$ . Divide by the number of values:  $45 \div 5 = 9$ . The mean is 9, representing the typical value in the data set. Always count the number of values carefully before dividing the sum (Chapter 10.1).

**24. B — 7.** Count how many times each value appears: 7 appears 4 times; 12 and 9 each appear 2 times; 14 appears once. The value that appears most often is 7. The mode is the most frequent value, not the largest — careful counting determines the mode (Chapter 10.2).

**25. A — Likely.** The jar has 9 grape candies out of 10 total ( $9 + 1 = 10$ ). Almost all the candies are grape — far more than half. So drawing grape is likely (probable but not certain). The other options don't fit: "certain" would require all grape; "impossible" would need zero grape; "equally likely" would need 5 of each (Chapter 10.4).

**26. B — 9 students.** Read the frequency table: Hot Chocolate = 17, Apple Cider = 8. Subtract:  $17 - 8 = 9$  students. The phrase "how many more" signals subtraction — finding the difference between two known values. Reading frequency tables and applying basic operations is a core data skill (Chapter 10.3).

**27. C — Equally likely to landing on red OR yellow combined.** The spinner has 3 green sections out of 6 total. Combined, red + yellow =  $2 + 1 = 3$  sections — the same as green. So landing on green has the same probability as landing on red or yellow. "Equally likely" describes outcomes with identical probability (Chapter 10.4).

**28. B — 34 butterflies.** From Figure PQ-2: Monarch = 13, Swallowtail = 7, Painted Lady = 10, Sulphur = 4. Add all four:  $13 + 7 + 10 + 4 = 34$  butterflies. Verify sequentially:  $13 + 7 = 20$ ;  $20 + 10 = 30$ ;  $30 + 4 = 34$ . Multi-category totals require careful sequential addition (Chapter 10.3).

**29. A — 80 snacks.** Add the snacks brought by all 5 classes:  $16 + 23 + 9 + 12 + 20 = 80$  snacks. Verify sequentially:  $16 + 23 = 39$ ;  $39 + 9 = 48$ ;  $48 + 12 = 60$ ;  $60 + 20 = 80$ . Multi-row table summations require careful sequential addition (Chapter 9.3).

**30. D — Impossible.** A 0% chance means the event will definitely NOT happen — there is no possibility of it occurring. Snow in a Toronto summer is essentially impossible given typical climate conditions. "Impossible" describes events with zero probability of occurring (Chapter 10.4).

**31. D — 5 vertices.** A square pyramid has 5 vertices: 4 at the corners of the square base + 1 at the apex where the four triangular faces meet. From the Chapter 11.2 reference table: square pyramid = 5 faces, 8 edges, 5 vertices.

**32. B — Triangular prism.** A triangular prism has 2 identical parallel triangular bases connected by 3 rectangular side faces. A triangular pyramid has only 1 triangular base and 3 triangular side faces meeting at a point. A cube has 6 square faces. A square pyramid has a square base, not triangular bases (Chapter 11.1).

**33. A — 38 cm.** Perimeter of a rectangle =  $2 \times (\text{length} + \text{width}) = 2 \times (11 + 8) = 2 \times 19 = 38$  cm. Or add all four sides:  $11 + 8 + 11 + 8 = 38$  cm. The shortcut formula is faster than adding all sides individually (Chapter 13.2).

**34. C — East.** A quarter-turn rotates 90 degrees. Starting facing south and turning left by  $90^\circ$  rotates counter-clockwise to face east. The cardinal direction cycle counter-clockwise: South  $\rightarrow$  East  $\rightarrow$  North  $\rightarrow$  West  $\rightarrow$  South. Always check whether the turn is left or right (Chapter 12.3).

**35. D — Millilitres.** A tea cup holds roughly 200–250 millilitres — firmly in the millilitre range. Litres are too large (a 1-litre tea cup would be enormous); grams and kilograms measure mass, not capacity. Only millilitres is appropriate for the capacity of a tea cup (Chapter 13.4).

**36. B — 5:15.** The hour hand sits between the 5 and the 6, closer to the 5 — so the hour is 5 (the smaller of the two numbers it sits between). The minute hand points to the 3, which equals 15 minutes past the hour ( $3 \times 5 = 15$ ). The time is 5:15, or "quarter past five" (Chapter 14.1).

**37. A — 2 hours 45 minutes.** From 8:40 AM to 10:40 AM is 2 hours. From 10:40 AM to 11:25 AM is 45 minutes (10:40 to 11:00 is 20 minutes; 11:00 to 11:25 is 25 minutes;  $20 + 25 = 45$ ). Total elapsed time: 2 hours + 45 minutes = 2 hours 45 minutes (Chapter 14.3).

**38. C — 63 square centimetres.** The rectangle is 9 cm wide and 7 cm tall. Area = length  $\times$  width =  $9 \times 7 = 63$  square centimetres. Or count the unit squares: 9 columns  $\times$  7 rows = 63 squares. Area is measured in square units ( $\text{cm}^2$ ) — the small "2" must be included (Chapter 14.5).

**39. D — 200,000 mL.** The relationship: 1 litre = 1,000 millilitres. So 200 litres =  $200 \times 1,000 = 200,000$  mL. The other options (2,000; 20,000; 20) represent different amounts. Always apply the conversion factor 1,000 when moving between litres and millilitres (Chapter 13.4).

**40. B — 30 cm.** A regular hexagon has 6 equal sides. Perimeter =  $6 \times \text{side length} = 6 \times 5 = 30$  cm. Or add all six sides:  $5 + 5 + 5 + 5 + 5 + 5 = 30$  cm. The multiplication shortcut works for any regular polygon — multiply the number of sides by the side length (Chapter 13.2).