PRACTICE EXAM 11: EQAO GRADE 6 MATHEMATICS SIMULATION (44 QUESTIONS)

STAGE 1 (Questions 1-11) — 30 minutes

1. (Number Sense) What is the place value of the digit 9 in the number 1,946,328?

A) 9,000

B) 900,000

C) 90,000

D) 9,000,000

2. (Algebra) A growing pattern starts at 7 and follows the rule "add 5 each time." What is the 8th term?

A) 35

B) 38

C) 40

D) 42

3. (Spatial Sense) How many faces does a square pyramid have?

A) 5

B) 6

C) 8

D) 4

4. (Number Sense) Calculate: 46.3 + 28.79

A) 74.09

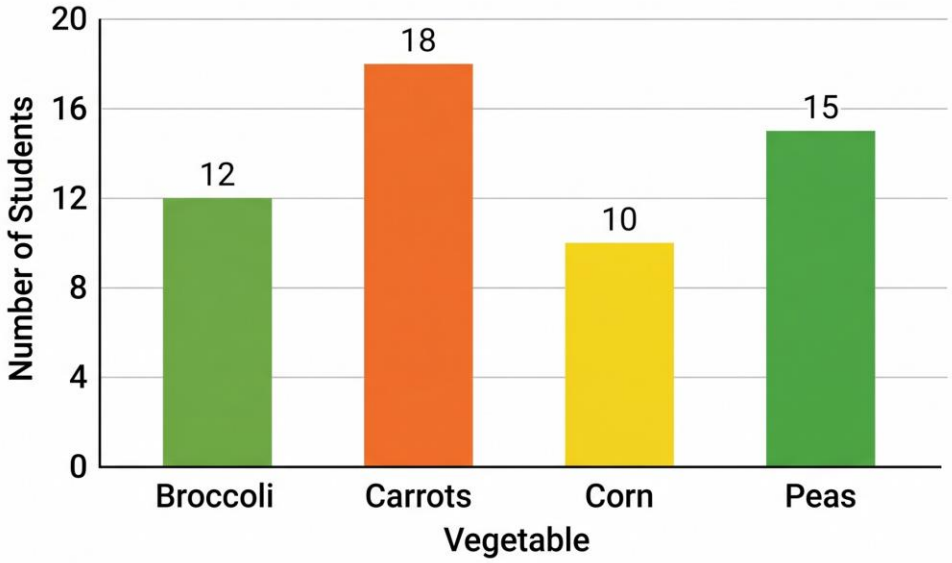
B) 75.99

C) 75.09

D) 74.99

5. (Data Literacy) The bar graph shows favorite vegetables of students surveyed.

[Figure PQ-1]



How many students chose carrots?

A) 15

B) 18

C) 12

D) 10

6. (Number Sense) Which fraction is greater than 4/7?

A) 3/4

B) 1/3

C) 2/5

D) 1/2

7. (Financial Literacy) Sara earns $9.75 per hour. How much does she earn for working 5 hours?

A) $45.00

B) $48.50

C) $47.75

D) $48.75

8. (Algebra) Solve for h: h ÷ 8 = 6

A) 14

B) 36

C) 48

D) 54

9. (Spatial Sense) An angle measures 110°. What type of angle is it?

A) Obtuse

B) Acute

C) Right

D) Straight

10. (Number Sense) Convert 5.7 kilometers to meters.

A) 57 m

B) 5,700 m

C) 570 m

D) 0.0057 m

11. (Algebra) Which expression represents "four less than three times a number n"?

A) 3 - 4n

B) 4 - 3n

C) 4n - 3

D) 3n - 4

STAGE 2 (Questions 12-22) — 30 minutes

12. (Number Sense) Calculate: 84 × 6

A) 484

B) 494

C) 504

D) 524

13. (Spatial Sense) A rectangle has a length of 10 cm and a width of 4 cm. What is its area?

A) 40 cm²

B) 28 cm²

C) 36 cm²

D) 50 cm²

14. (Data Literacy) Six values were recorded: 12, 18, 15, 12, 20, 14. What is the median?

A) 14

B) 14.5

C) 15

D) 12

15. (Number Sense) Calculate: 624 ÷ 8

A) 72

B) 75

C) 76

D) 78

16. (Algebra) Evaluate the expression 5p - 12 when p = 7.

A) 18

B) 21

C) 23

D) 25

17. (Financial Literacy) A jacket costs $75. The sales tax is 12%. What is the total cost?

A) $81.00

B) $84.00

C) $87.00

D) $90.00

18. (Number Sense) Simplify the fraction: 24/36

A) 2/3

B) 3/4

C) 4/6

D) 6/9

19. (Spatial Sense) How many vertices does a cube have?

A) 4

B) 6

C) 8

D) 12

20. (Data Literacy) A spinner has 10 equal sections: 4 red, 3 blue, 2 green, and 1 yellow. What is the probability of spinning yellow?

A) 4/10

B) 3/10

C) 2/10

D) 1/10

21. (Algebra) What is the next term in this sequence: 2, 5, 11, 23, 47, ___?

A) 89

B) 95

C) 94

D) 92

22. (Number Sense) What is 7/8 written as a decimal?

A) 0.875

B) 0.78

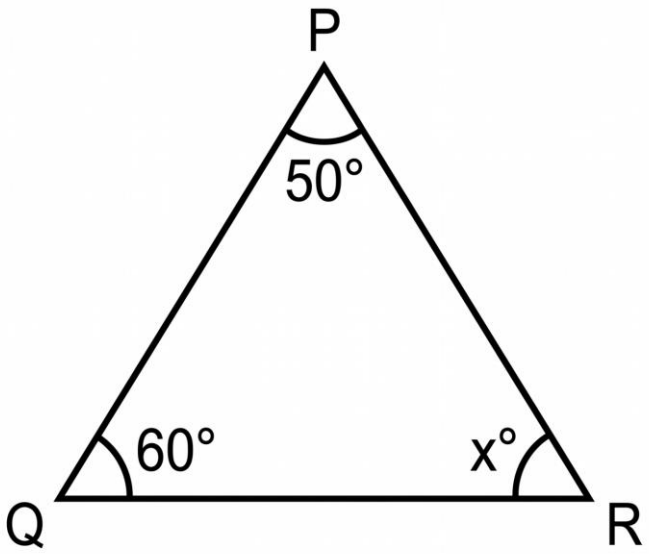
C) 0.85

D) 0.87

STAGE 3 (Questions 23-33) — 30 minutes

23. (Spatial Sense) The diagram shows triangle PQR with two angles labeled.

Figure PQ-2



What is the measure of angle x?

A) 80°

B) 60°

C) 70°

D) 90°

24. (Number Sense) Calculate: 7/12 + 1/4

A) 6/8

B) 8/16

C) 6/12

D) 5/6

25. (Algebra) Solve for x: 5x + 12 = 47

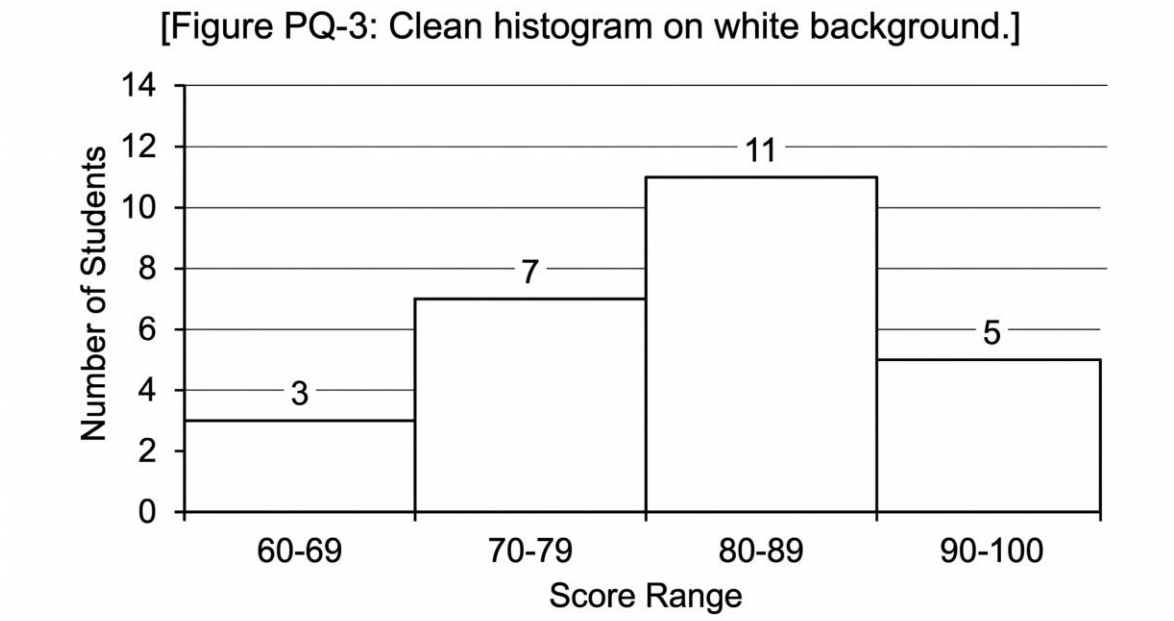
A) 7

B) 8

C) 9

D) 11

26. (Data Literacy) The histogram shows test scores for a class of students.



How many students scored between 80-89?

A) 7

B) 11

C) 3

D) 5

27. (Number Sense) Which expression equals exactly 1?

A) 5/8 + 1/4

B) 3/4 + 1/2

C) 2/3 + 1/6

D) 3/5 + 2/5

28. (Financial Literacy) A bicycle costs $320. It is on sale for 25% off. What is the sale price?

A) $250

B) $280

C) $240

D) $260

29. (Spatial Sense) Point A is at coordinates (3, 5). If point A is reflected across the x-axis, what are the new coordinates?

A) (3, -5)

B) (-3, 5)

C) (-3, -5)

D) (5, 3)

30. (Algebra) A taxi company charges a flat fee of $4 plus $2 per kilometer. Which expression represents the cost for k kilometers?

A) $4k + 2$

B) $4 + 2k$

C) $6k$

D) $4(2 + k)$

31. (Number Sense) Evaluate: $3^2 + 4 \times 5 - 6$

A) 19

B) 21

C) 23

D) 25

32. (Data Literacy) A dataset contains these values: 25, 32, 28, 19, 35, 22. What is the range?

A) 25

B) 32

C) 22

D) 16

33. (Spatial Sense) A regular hexagon has each side measuring 9 cm. What is its perimeter?

A) 45 cm

B) 54 cm

C) 63 cm

D) 72 cm

STAGE 4 (Questions 34-44) — 30 minutes

34. (Number Sense) Which integer is the greatest?

A) 0

B) -1

C) -5

D) -10

35. (Algebra) If 3y - 5 = 22, what is the value of y?

A) 7

B) 8

C) 9

D) 10

36. (Data Literacy) A bag contains 20 balls: 5 red, 8 blue, 4 green, and 3 yellow. What is the probability of drawing a yellow ball?

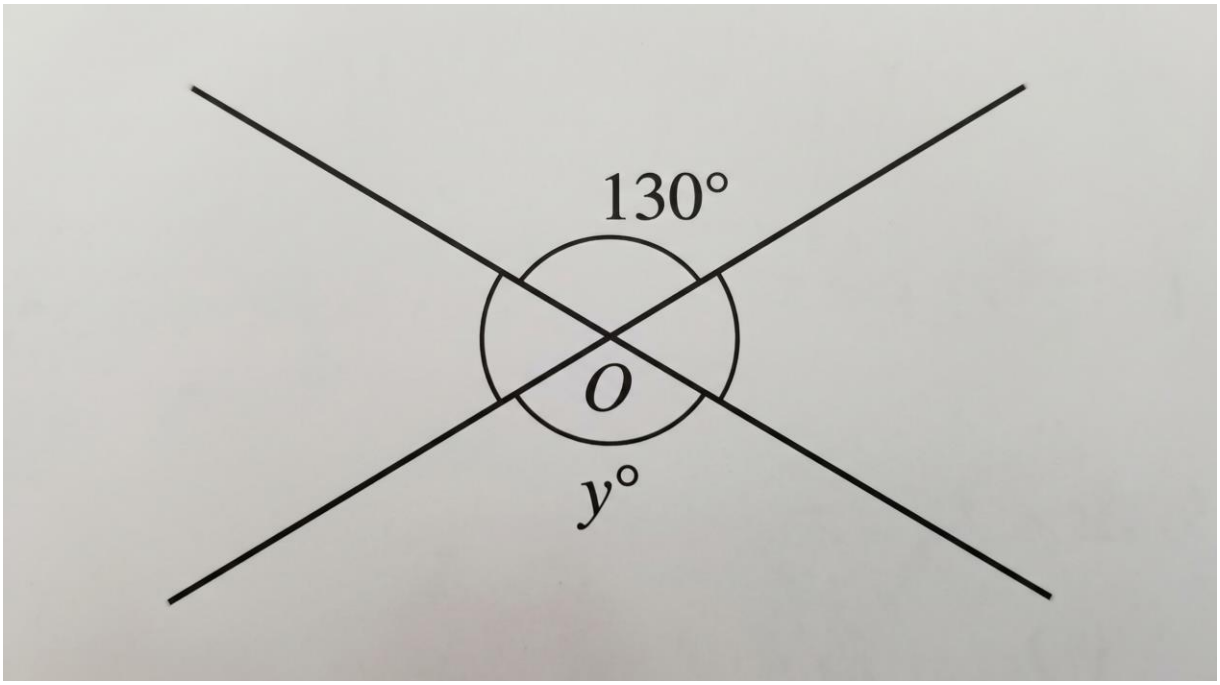
A) 5/20

B) 8/20

C) 4/20

D) 3/20

37. (Spatial Sense) The diagram shows two intersecting lines forming four angles.



What is the value of angle y?

A) 50°

B) 130°

C) 90°

D) 70°

38. (Number Sense) Calculate: 0.5 × 8

A) 0.4

B) 8.5

C) 4

D) 16

39. (Financial Literacy) James deposits $400 in a savings account at 5% simple interest per year. How much money will be in the account after 3 years?

A) $460

B) $440

C) $420

D) $500

40. (Algebra) A rectangle has a width of w cm. Its length is 5 cm more than 3 times its width. Which expression represents the perimeter?

A) 6w + 5

B) 8w + 5

C) 6w + 10

D) 8w + 10

41. (Number Sense) What number makes this statement true? 3/8 = ?/40

A) 12

B) 18

C) 15

D) 20

42. (Data Literacy) Five measurements were recorded: 22, 28, 24, 26, 20. What is the mean?

A) 22

B) 24

C) 26

D) 28

43. (Spatial Sense) A square has an area of 64 cm^2. What is the length of one side?

A) 8 cm

B) 16 cm

C) 32 cm

D) 4 cm

44. (Data Literacy) A frequency table shows: 3 appears 2 times, 5 appears 4 times, 7 appears 3 times, 9 appears 1 time. What is the mode?

A) 3

B) 7

C) 9

D) 5

Practice Exam 11: Answer Key and Explanations

1. B — The digit 9 occupies the hundred-thousands place in 1,946,328. Reading positions from right to left (ones, tens, hundreds, thousands, ten-thousands, hundred-thousands), the digit 9 sits in the sixth position with a value of 9 × 100,000 = 900,000. Place value identification is fundamental for reading and comparing large numbers.

2. D — Starting at 7 and adding 5 repeatedly produces: term 1 = 7, term 2 = 12, term 3 = 17, term 4 = 22, term 5 = 27, term 6 = 32, term 7 = 37, term 8 = 42. This arithmetic sequence has a constant difference of +5. Tracking each term carefully ensures accurate identification of any specific position.

3. A — A square pyramid has 5 faces total: 1 square base plus 4 triangular faces that meet at the apex. The formula for pyramid faces equals 1 (base) + n (sides matching the base's sides). Understanding face counts supports surface area calculations and net construction.

4. C — Align decimal points and add: 46.30 + 28.79 = 75.09. Writing 46.3 as 46.30 ensures matching decimal places. Proper alignment of place values is essential for accurate decimal operations in money and measurement contexts.

5. B — Reading the bar graph, the carrots bar reaches a height of 18 students. Bar graphs allow direct reading of values by matching the top of each bar to the corresponding y-axis value. Categorical comparisons enable quick identification of specific data points.

6. A — Convert fractions to decimals for comparison: 4/7 ≈ 0.571, 3/4 = 0.75, 1/3 ≈ 0.333, 2/5 = 0.4, 1/2 = 0.5. Only 3/4 (0.75) exceeds 4/7 (0.571). Converting fractions to decimals provides a straightforward comparison method.

7. D — Multiply hourly rate by hours worked: $9.75 × 5 = $48.75. Breaking down: $9 × 5 = $45, plus $0.75 × 5 = $3.75, totaling $48.75. Accurate decimal multiplication is essential for calculating wages and other financial transactions.

8. C — Solve by multiplying both sides by 8: h ÷ 8 = 6 → h = 6 × 8 = 48. Multiplication is the inverse operation of division, used to isolate the variable. Check: 48 ÷ 8 = 6 ✓. One-step equations build foundational algebraic skills.

9. A — Obtuse angles measure greater than 90° but less than 180°. An angle of 110° falls within this range, making it obtuse. Acute angles measure less than 90°, right angles measure exactly 90°, and straight angles measure exactly 180°. Recognizing angle classifications supports geometric reasoning.

10. B — Convert kilometers to meters by multiplying by 1,000: 5.7 km × 1,000 = 5,700 m. The metric system uses base-10 conversions, with 1 km equal to 1,000 m. Moving from larger to smaller units requires multiplication, producing a larger numerical value.

11. D — "Three times a number n" translates to 3n (multiplication first), and "four less than" means subtract 4 from that product, giving 3n - 4. The phrase "less than" reverses subtraction order: the value being subtracted comes from the second part of the description.

12. C — Multiply 84 × 6: using the distributive property, 84 × 6 = (80 + 4) × 6 = 480 + 24 = 504. Breaking large multiplications into manageable parts using place value reduces calculation errors. Verification: 504 ÷ 6 = 84 ✓.

13. A — Area of a rectangle = length × width = 10 × 4 = 40 cm². Area measures the two-dimensional space inside a shape, expressed in square units. This calculation supports practical applications like determining flooring needs or garden sizes.

14. B — Order the values: 12, 12, 14, 15, 18, 20. With 6 values (even count), the median is the average of the two middle values (positions 3 and 4): (14 + 15) ÷ 2 = 14.5. For even-numbered datasets, the median falls between two actual values.

15. D — Divide 624 by 8: breaking this down, 560 ÷ 8 = 70, plus 64 ÷ 8 = 8, giving 70 + 8 = 78. Verification: 8 × 78 = 624 ✓. Division efficiency improves with familiarity with multiplication facts and partial quotient strategies.

16. C — Substitute p = 7 into the expression 5p - 12: 5(7) - 12 = 35 - 12 = 23. Order of operations requires performing multiplication before subtraction per BEDMAS. Evaluating algebraic expressions connects symbolic algebra to numerical results.

17. B — Calculate 12% tax: 12% of $75 = 0.12 × $75 = $9. Add tax to original price: $75 + $9 = $84. Sales tax calculations require finding the percent of the base price and adding it to determine the total purchase cost.

18. A — Simplify 24/36 by dividing both numerator and denominator by their greatest common factor (12): 24/36 = (24÷12)/(36÷12) = 2/3. Equivalent fractions represent the same value despite different appearance. Reducing to simplest form supports easier comparison.

19. C — A cube has 8 vertices, located at each corner where three edges meet. A cube also has 6 faces and 12 edges. Understanding 3D shape properties supports surface area calculations and spatial reasoning. The vertices are the corner points.

20. D — Probability equals favorable outcomes divided by total outcomes: P(yellow) = 1 yellow / 10 total = 1/10. Probability values range from 0 (impossible) to 1 (certain), expressing likelihood as a fraction. With only 1 yellow section out of 10, yellow is the least likely outcome.

21. B — The pattern doubles each term and adds 1: 2 × 2 + 1 = 5, 5 × 2 + 1 = 11, 11 × 2 + 1 = 23, 23 × 2 + 1 = 47, 47 × 2 + 1 = 95. Identifying compound rules (multiply then add) requires examining multiple operations between consecutive terms.

22. A — Convert 7/8 to a decimal by dividing the numerator by the denominator: 7 ÷ 8 = 0.875. The fraction 7/8 represents 7 parts out of 8 equal parts, equivalent to 875/1000 = 0.875. Memorizing common fraction-decimal equivalents speeds calculations.

23. C — The interior angles of any triangle sum to 180°. The third angle equals 180° - 50° - 60° = 70°. This angle sum property holds for all triangles regardless of type, making it a powerful tool for finding missing angles in geometric problems.

24. D — Find common denominator (12): 7/12 + 1/4 = 7/12 + 3/12 = 10/12 = 5/6 simplified. Converting 1/4 to twelfths by multiplying numerator and denominator by 3. Adding fractions requires like denominators so numerators represent parts of the same-sized whole.

25. A — Solve the two-step equation: 5x + 12 = 47 → subtract 12 from both sides: 5x = 35 → divide both sides by 5: x = 7. Check: 5(7) + 12 = 35 + 12 = 47 ✓. Two-step equations require systematic application of inverse operations.

26. B — Reading the histogram, the bar for the 80-89 score interval reaches a height of 11 students. Histograms display frequency distributions for grouped data, with bar height representing the count within each interval. The tallest bar identifies the most common range.

27. D — Evaluate each option: 5/8 + 1/4 = 7/8; 3/4 + 1/2 = 5/4; 2/3 + 1/6 = 5/6; 3/5 + 2/5 = 5/5 = 1. Only option D produces exactly 1 because the numerators add to equal the denominator. When fractions share a denominator, adding their numerators gives the total numerator.

28. C — Calculate the discount: 25% of $320 = 0.25 × $320 = $80. Subtract from original price: $320 - $80 = $240. Recognizing 25% = 1/4 enables quick mental calculation: $320 ÷ 4 = $80 discount. Sale price calculations support informed consumer decisions.

29. A — Reflection across the x-axis changes the sign of the y-coordinate while x remains unchanged: (x, y) → (x, -y). Point A at (3, 5) reflects to A'(3, -5). The x-axis acts as a horizontal mirror line, flipping points above to below while maintaining horizontal position.

30. B — The fixed flat fee is $4, and the variable cost is $2 per kilometer. For k kilometers, the variable cost is 2k. Total cost: 4 + 2k. The constant term represents fixed costs while the coefficient times variable represents usage-based costs.

31. C — Apply order of operations: exponent first: $3^2 = 9$; then multiplication: $4 \times 5 = 20$; finally add and subtract left to right: $9 + 20 - 6 = 29 - 6 = 23$. BEDMAS ensures consistent evaluation: exponents before multiplication before addition/subtraction.

32. D — Range equals maximum minus minimum: maximum = 35, minimum = 19, so range = 35 - 19 = 16. Range measures variability or spread in data, indicating how far apart the extreme values are. This simple measure provides a quick sense of data dispersion.

33. B — A regular hexagon has 6 equal sides. Perimeter equals the sum of all sides: $6 \times 9 = 54$ cm. Regular polygons (all sides and angles equal) have perimeters calculated by multiplying side length by the number of sides. This shortcut applies to any regular polygon.

34. A — Comparing the integers: $0 > -1 > -5 > -10$. Zero is greater than any negative number because it lies to the right of all negatives on the number line. With negative numbers, the smaller the absolute value, the greater the number.

35. C — Solve the two-step equation: $3y - 5 = 22 \rightarrow$ add 5 to both sides: $3y = 27 \rightarrow$ divide both sides by 3: $y = 9$. Check: $3(9) - 5 = 27 - 5 = 22$ ✓. Two-step equation solving applies inverse operations systematically to isolate the variable.

36. D — Probability equals favorable outcomes divided by total outcomes: P(yellow) = 3 yellow / 20 total = 3/20. The fraction expresses the likelihood of drawing a yellow ball on a single random selection. Probability quantifies chance as a fraction.

37. B — Vertically opposite angles formed by two intersecting lines are always equal in measure. The angle marked 130° and angle y sit directly across from each other through the intersection point, making $y = 130°$. This property holds regardless of the specific angle measures.

38. C — Multiply 0.5×8: think of 0.5 as one-half, so half of 8 equals 4. Alternatively, $5 \times 8 = 40$, then place decimal one position from right since 0.5 has one decimal place: 4.0. Decimal multiplication requires careful attention to decimal point placement.

39. A — Calculate interest first: $I = P \times r \times t = \$400 \times 0.05 \times 3 = \$60$. Then add to original deposit: \$400 + \$60 = \$460. The total account balance equals principal plus interest earned. Simple interest grows savings predictably over time.

40. D — The length is $3w + 5$ (5 more than three times the width). Perimeter = 2(length) + 2(width) = $2(3w + 5) + 2w = 6w + 10 + 2w = 8w + 10$. Combining like terms ($6w + 2w = 8w$) simplifies the expression to its final form.

41. C — The denominator changes from 8 to 40, which is multiplying by 5 ($8 \times 5 = 40$). Apply the same factor to the numerator: $3 \times 5 = 15$. Therefore, $3/8 = 15/40$. Equivalent fractions are created by multiplying both parts by the same value.

42. B — Calculate mean by summing values and dividing by count: (22 + 28 + 24 + 26 + 20) ÷ 5 = 120 ÷ 5 = 24. The mean represents the central balancing point of the dataset where all values contribute equally. Mean is the most commonly used measure of central tendency.

43. A — A square has all sides equal. Area = side² = 64 cm². Find the side length by taking the square root: √64 = 8 cm. Verification: 8 × 8 = 64 ✓. Square root operations reverse squaring, finding the original side from a known area.

44. D — The mode is the value with the highest frequency. From the table, 5 appears 4 times, more than any other value (3 appears 2 times, 7 appears 3 times, 9 appears 1 time). The mode is 5, the most commonly occurring value in the dataset.