Part 1: Number Sense and Operations (MA.6.NSO)

1 What is the absolute value of -15?

2 Order the following numbers from least to greatest: $-3, 0.5, -\frac{1}{2}, -4, 2$.

3 What is the greatest common factor (GCF) of 24 and 36?

4 What is the least common multiple (LCM) of 6 and 8?

5 Plotting points on a coordinate plane: In which quadrant would the point $(-4, -6)$ be located?

6 Evaluate the expression: 4^3.

7 Find the value of $\sqrt{64}$.

8 Rewrite the statement using an integer: "The submarine dove 250 feet below sea level."

9 If a temperature drops from 7°C to -3°C, what was the total change in temperature?

10 Find the distance between the points $(3, 5)$ and $(3, -4)$ on a coordinate plane.

Part 2: Fractions and Decimals (MA.6.NSO.2)

11 Divide: $\frac{3}{4} \div \frac{1}{8}$.

12 Solve: 12.45×3.2.

13 Divide: $45.6 \div 0.04$.

14 A recipe requires $2\frac{2}{3}$ cups of flour. If you want to make triple the recipe, how many cups of flour do you need?

15 Convert $\frac{5}{8}$ into a decimal.

16 Convert 0.35 into a fraction in simplest form.

17 Subtract: $15 - 4.73$.

18 A piece of wood is 10.5 feet long. If it is cut into equal pieces measuring 1.5 feet each, how many pieces will you have?

19 Add: $\frac{5}{6} + \frac{3}{4}$.

20 Solve: $3.8 + 12.09 + 0.456$.

Part 3: Ratios and Proportional Relationships (MA.6.AR.3)

21 A basket contains 4 apples and 6 oranges. What is the ratio of apples to total fruit in simplest form?

22 If a car travels 180 miles in 3 hours, what is its unit rate in miles per hour?

23 Find 25% of 80.

24 A jacket originally costs $60 but is on sale for 15% off. What is the discount amount in dollars?

25 Express the ratio 3:5 as a percentage.

26 If 3 pounds of bananas cost $2.40, how much would 5 pounds of bananas cost?

27 Write the missing number to make the ratios equivalent: $\frac{4}{7} = \frac{x}{28}$.

28 A map has a scale of 1 inch = 50 miles. If two cities are 3.5 inches apart on the map, what is the actual distance between them?

29 In a classroom, 60% of the 25 students are girls. How many girls are in the classroom?

30 Convert 4 quarts into cups (Hint: 1 quart = 4 cups).

Part 4: Algebraic Reasoning (MA.6.AR.1 & MA.6.AR.2)

31 Write an algebraic expression for the phrase: "12 less than a number, x."

32 Evaluate the expression $3x - 5$ when $x = 4$.

33 Simplify the expression by combining like terms: $4x + 7 + 2x - 3$.

34 Use the distributive property to expand the expression: $5(2x + 3)$.

35 Solve the one-step equation: $x + 14 = 35$.

36 Solve the one-step equation: $6y = 42$.

37 Solve the one-step equation: $\frac{m}{5} = 12$.

38 Which value from the set $\{2, 4, 6, 8\}$ makes the inequality $2x > 10$ true?

39 Write an inequality to represent the statement: "The temperature, t, must be at least 65 degrees."

40 Identify the independent variable in this scenario: "The total cost of a taxi ride (C) depends on the number of miles driven (m)."

Part 5: Geometric Reasoning (MA.6.GR)

41 Find the area of a triangle with a base of 8 cm and a height of 5 cm.

42 Find the area of a parallelogram with a base of 12 inches and a height of 7 inches.

43 A rectangular prism has a length of 5 cm, a width of 3 cm, and a height of 4 cm. What is its volume?

44 Find the surface area of a cube where each edge measures 3 inches.

45 A rectangle drawn on a coordinate plane has vertices at $(1, 2)$, $(1, 6)$, $(5, 6)$, and $(5, 2)$. What is the perimeter of the rectangle?

Part 6: Data Analysis and Probability (MA.6.DP)

46 Find the mean of the data set: $8, 12, 15, 9, 11$.

47 Find the median of the data set: $3, 7, 9, 4, 6, 10, 8$.

48 What is the mode of the following data set? $5, 8, 5, 9, 12, 5, 8, 3$.

49 Find the range of the data set: $23, 45, 12, 67, 34$.

50 If a data set consists of the numbers $2, 3, 3, 4, 20$, which measure of center (mean or median) is most affected by the outlier, 20?