Each correct answer is worth 10 points.

1: Calculate and reduce: \[ \left( \frac{11}{18} - \frac{7}{18} \right) \div \left( \frac{2}{5} + 3 \right). \]

2: Rationalize the denominator of \( \frac{5 - 2\sqrt{5}}{7 + 3\sqrt{5}} \). Give your answer in the form \( a + b\sqrt{5} \).

3: Ten percent of 42 is the same as 15% of what number?

4: A circular garden with a radius of 8 feet has a border 1 foot wide. Find the area of the border.

5: If \( x \ast y = x + y - xy \), find the value of \( ((1 \ast 2) \ast 3) \ast 4 \).

6: If your average on your first five math tests was 73 and your average on the next three math tests was 85, what is your overall average?

7. In the diagram at right, the large circle has radius 2 and is centered at the origin. The small circle has radius 1 and is tangent to both the large circle and the x-axis. What is the x-coordinate of the point where the small circle is tangent to the x-axis?

8: A bicyclist leaves town traveling at 10 mph. Three hours later, a car leaves town going in the same direction. If the car travels at 50 mph, how far will it have traveled when it overtakes the bike?

9: Solve for \( x \): \( (x - 4)^2 - 3(x - 4)(x + 1) = 10(x + 1)^2 \).

10: If seven oranges and two pears cost $2.60 and seven pears and two oranges cost $1.90, how much does one orange cost?