

Unit 9: Putting It All Together

ADVANCED

Name: _____ Date: _____

Solve each problem. Show your work on scratch paper and write your final answer in the blank. Give exact values (fractions or square roots where needed), not rounded decimals.

1. A right triangle has legs of length 9 and 40. Find the exact length of the hypotenuse.

Answer: _____

3. Simplify to a single whole number: $(2^3 \times 2^4) / 2^5$.

Answer: _____

5. A right triangle has a hypotenuse of length 25 and one leg of length 7. Find the length of the other leg.

Answer: _____

7. y varies directly with x ($y = kx$). When $x = 6$, $y = 15$. Find y when $x = 14$.

Answer: _____

9. Find the exact distance between the points (2, -3) and (7, 9).

Answer: _____

11. The function $f(x) = 4x - 18$ crosses the x -axis where $f(x) = 0$. Find that x -value. Give your answer as a fraction.

Answer: _____

2. Solve for x : $3(2x - 5) - 4(x + 2) = 7$.

Answer: _____

4. A function is defined by $f(x) = -3x + 7$. Find $f(-4)$.

Answer: _____

6. Simplify to a single whole number: $3^{(-2)} \times 3^4$.

Answer: _____

8. Solve for x : $(1/2)x + 2/3 = (5/6)x - 1$.

Answer: _____

10. Evaluate: $4^3 - 2^5 + \sqrt{81}$.

Answer: _____

12. A right triangle has legs of length 15 and 8. Find its perimeter (the sum of all three side lengths).

Answer: _____