

Unit 9: Putting It All Together

ADVANCED · SET 2

Name: _____ Date: _____

Solve each problem and write your exact answer (a number, fraction, coordinate pair, ratio, or short value) on the line provided. Show your work.

1. Solve for x : $3(2x - 5) - 4(x + 2) = 2x - 23$. If the equation has infinitely many solutions write 'infinite'; if no solution write 'none'; otherwise give the value of x .

Answer: _____

3. Evaluate: $(2^5 \times 2^{-8}) \div 2^{-6}$. Give your answer as a single power of 2 with a positive exponent, or as a whole number.

Answer: _____

5. Simplify to a single power and then evaluate: $(3^4 \times 3^2) / 3^5$. Give the whole-number value.

Answer: _____

7. A phone plan charges a fixed monthly fee plus a per-minute rate. In one month 150 minutes cost \$47; in another month 400 minutes cost \$72. Find the per-minute rate in dollars (as a decimal).

Answer: _____

9. A rectangular box has a base that is 12 cm by 16 cm. A diagonal of the base is drawn. Find the length of that base diagonal in cm.

Answer: _____

2. A linear function is defined by $f(x) = -\frac{3}{4}x + 11$. Find the value of x for which $f(x) = -7$.

Answer: _____

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

Answer: _____

6. The points $A(-2, 5)$ and $B(4, -3)$ are endpoints of a segment. Using the Pythagorean Theorem, find the exact length of AB . Give the answer in the form $\sqrt{n}$ or a whole number.

Answer: _____

8. Evaluate $\sqrt{144} + \sqrt{81} - \sqrt{225}$. Give the whole-number result.

Answer: _____

10. The function $g(x) = 5x - 3$ and the function $h(x) = 2x + 9$ give the same output for some input x . Find that value of x .

Answer: _____

11. Evaluate $(4^3 \times 2^{-2})$ and express the result as a whole number.

Answer: _____