La Scuola d'Italia / Huson / IB Math: Probability First & last name:
15 January 2026 Grade:

4.8 Classwork: Quadratics review, exponents

1. Let $y = x^2 - 5x + 4$ and $2x + y = 4$

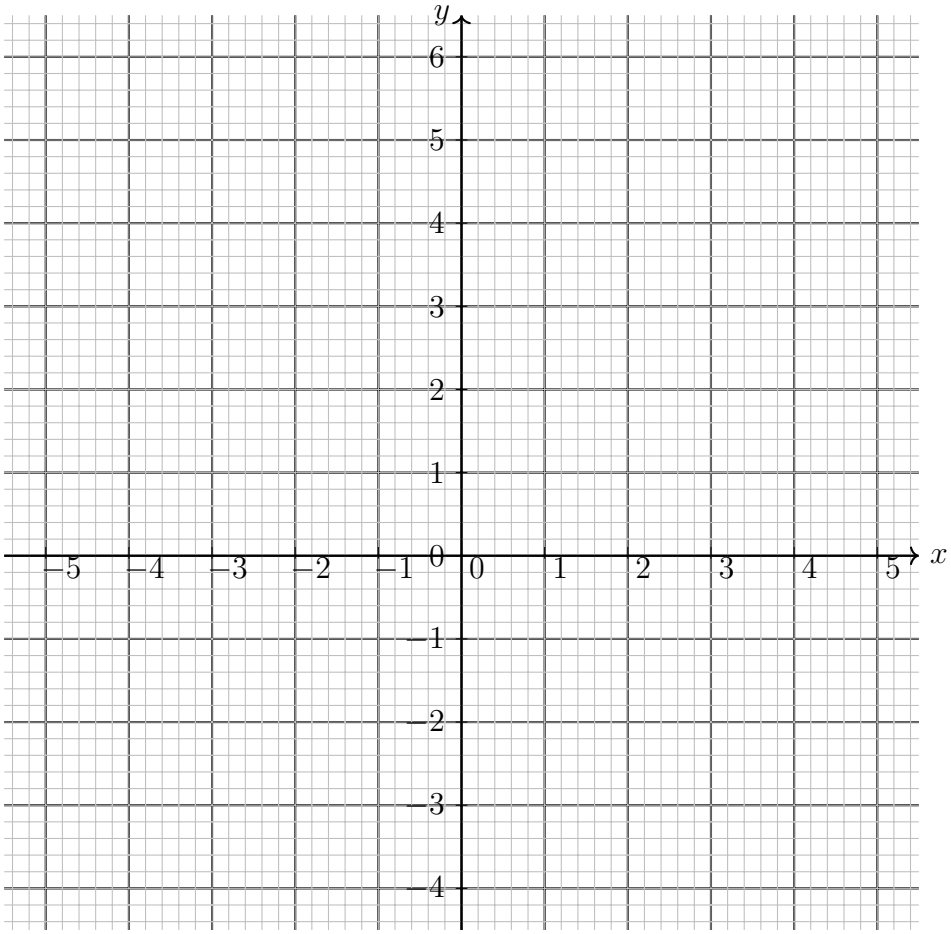
   (a) Rewrite quadratic in vertex form and state the vertex as an ordered pair.

   (b) Factor the quadratic function and write down its roots.

   (c) Graph the parabola, labeling it. Mark the intercepts and graph the axis of symmetry as a dotted line, labeling it with its equation.

   (d) Graph linear equation and label it with its name or equation.

   (e) Mark the intersections of the two equations as ordered pairs.



Simplify, leaving no negative or fractional exponents.

2. $2x^{-3}y \times \frac{1}{4}x^2y^{-1}$

3. $a^{\frac{3}{4}} \times (\frac{\sqrt{a}}{b^4})^{\frac{1}{2}}$

4. $\ln e^4$

5. $\log 5^2 + \log 4$

6. $(2x^2 - x - 5)(x - 3) - (x^2 + 3x - 5)(2x - 3)$

7. Factor the expression and then solve for x: $2x^3 - 2x^2 - 24x = 0$

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8. Let $f(x) = 2x - 5$ and $g(x) = (x-1)^2$

   (a) Find $(f \circ g)(x)$

   (b) Find $f^{-1}(x)$

9. The function $f(x) = e^x$ is shown on the graph. Sketch $g(x) = f(x-2) + 3$. Plot and label the asymptote(s).