

Inverse Relations :

A. Solve each of the following equations for one positive y:

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|-------------------|-----------------------|
| 1. $5x + 3y = -3$ | 5. $3x^2 + 4y^2 = 12$ |
| 2. $3x + 5y = -3$ | 6. $4x^2 + 3y^2 = 12$ |
| 3. $y + x^2 = 6$ | 7. $y - x^3 = 6$ |
| 4. $x + y^2 = 6$ | 8. $x - y^3 = 6$ |

B. Graph each pair of equations on the same coordinate plane.

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|--------------------------------------|--------------------------------------------------|
| 1. $y = 2x + 3, y = \frac{(x-3)}{2}$ | 2. $y = x^2, y = \pm\sqrt{x}$ |
| 3. $y = x^3, y = \sqrt[3]{x}$ | 4. $y = \frac{2x+7}{x+3}, y = \frac{-3x+7}{x-2}$ |

Reciprocal Functions

A. Determine the reciprocals of each of the following:

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|------|--------|------------|--------------|
| 1. 4 | 2. -5 | 3. 3/5 | 4. -7/3 |
| 5. x | 6. 2/x | 7. (x + 3) | 8. x/(x - 5) |

B. Solve each of the following equations:

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|------------------------|----------------------------|
| 1. $(x-2)(x+3) = 0$ | 2. $(2x-1)(x+3)(3x+4) = 0$ |
| 3. $x^2 - 7x + 12 = 0$ | 4. $2x^2 - 7x + 3 = 0$ |

C. Determine the values for which the rational function is undefined

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|------------------------------------------------|-------------------------------------------------|
| 1. $f(x) = y = \frac{x+2}{(x+3)(x-1)}$ | 2. $f(x) = y = \frac{2}{2x^2 - x - 3}$ |
| 3. $f(x) = y = \frac{x^4 - 3x^2 - 5}{x^5 - x}$ | 4. $f(x) = y = \frac{2x^2 + 5}{x^3 - 2x^2 + x}$ |

D. Graph each pair of functions on the same coordinate plane

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|-----------------------------------------|-------------------------------------------|
| 1. $y = x, y = \frac{1}{x}$ | 2. $y = 2x - 1, y = \frac{1}{2x - 1}$ |
| 3. $y = x^2 - 4, y = \frac{1}{x^2 - 4}$ | 4. $y = \frac{x}{x+2}, y = \frac{x+2}{x}$ |