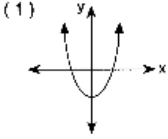
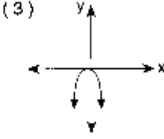
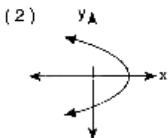
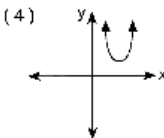


<p>1. The domain of the equation below is all real numbers</p> $y = \frac{1}{(x-1)^2}$ <p>(1) greater than 1 (3) less than 1 (2) except 1 (4) except 1 and -1</p>	<p>7. If $f(x) = kx^2$ and $f(2) = 12$, then what is the value of k?</p>
<p>2. Solve without calculator. Then use calculator to check.</p> <p>What is the domain of $f(x) = \frac{1}{\sqrt{4-x^2}}$?</p> <p>(1) $x < 2$ (3) $-2 < x < 2$ (2) $x \leq 2$ (4) all real numbers</p>	<p>8. Write a quadratic equation with integral coefficients whose roots are $\frac{1+\sqrt{2}}{2}$ and $\frac{1-\sqrt{2}}{2}$.</p>
<p>3. The domain for $f(x) = x^2 - 3$ is $0 \leq x \leq 4$. The smallest value in the range of $f(x)$ is</p> <p>(1) 0 (3) -3 (2) 16 (4) 4</p>	<p>9. Given the number $a + bi$ with $b = 0$, which must be true?</p> <p>(1) It is a real number. (2) It is a rational number. (3) It is a pure imaginary number. (4) It is an imaginary number.</p>
<p>4. Find all values of x for which $f(x)$ is undefined.</p> $f(x) = \frac{4}{ x - 2}$	<p>10. Find the inverse of $y = 2(x - 3)^2 + 1$. Is the inverse a function?</p>
<p>5. Which relation is <i>not</i> a function?</p> <p>(1) $y = 2x + 4$ (3) $x = 3y - 2$ (2) $y = x^2 - 4x + 3$ (4) $x = y^2 + 2x - 3$</p>	<p>11. Express the roots in simplest $a + bi$ form:</p> $3 - 2x = \frac{4}{x}$
<p>6. If $f(x) = \frac{2}{x+3}$ and $g(x) = \frac{1}{x}$, find $(g \circ f)(x)$ in simplest form.</p>	

<p>12. Which equation has rational roots?</p> <p>(1) $x^2 + 8x - 8 = 0$ (2) $x^2 + 8x + 9 = 0$ (3) $2x^2 + 4x + 5 = 0$ (4) $3x^2 + 8x + 4 = 0$</p>	<p>16. Express the multiplicative inverse in simplest $a + bi$ form: $\frac{-2 - 3i}{3 + 2i}$</p>
<p>13. Which term describes the roots of the equation $2x^2 + 3x + 1 = 0$?</p> <p>(1) rational (3) equal (2) irrational (4) imaginary</p>	<p>17. Solve for z: $\sqrt{z} - 3 = \sqrt{z - 27}$</p>
<p>14. a) Which diagram could represent the graph of an equation with imaginary roots? b) Which diagram does <i>not</i> represent a function?</p> <p>(1)  (3) </p> <p>(2)  (4) </p>	<p>18. If $f(x) = 2x^2 + 4$ and $g(x) = x - 3$, find all values of x that satisfy the equation $f(x) = (f \circ g)(x)$.</p>
<p>15. If $f(x) = \frac{1}{x}$, $g(x) = 1 - x$, and $h(x) = x^2$, express $\frac{(g \circ f)(x)}{(f \circ h)(x) - f(x)}$ in simplest form.</p>	<p>19. Sam says that she can factor out f as shown below: $f(g(x)) - f(x) = f(g(x) - x)$ But her friend Jessica believes that Sam is incorrect. Who is correct? Justify your response.</p>