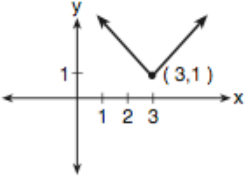
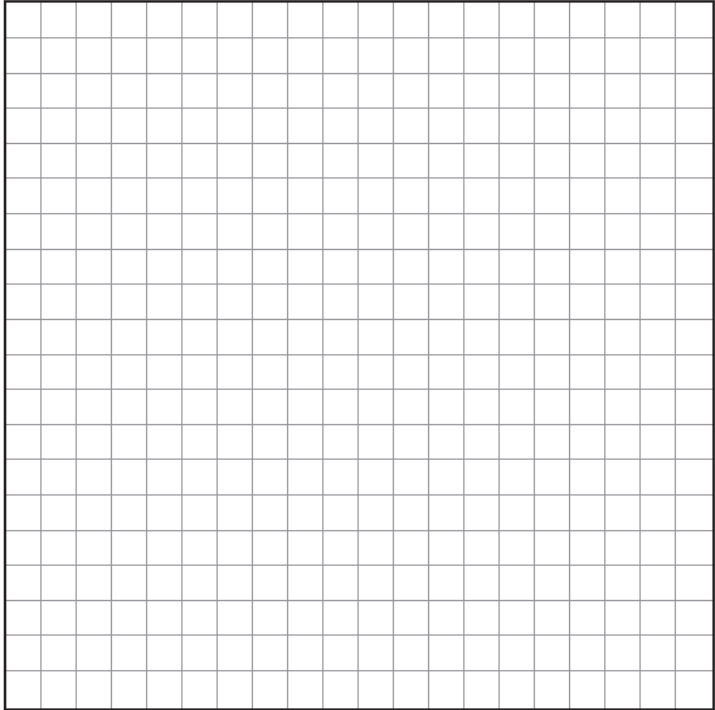


<p>1. Which equation is represented by the accompanying graph?</p>  <p>(1) <math>y =  x  - 3</math>          (2) <math>y = (x - 3)^2 + 1</math>          (3) <math>y =  x + 3  - 1</math>          (4) <math>y =  x - 3  + 1</math></p>	<p>3. Write the equation of an ellipse whose center is <math>(3, -2)</math> and is tangent to the y-axis.</p>
<p>2. The inverse relation of the function defined by <math>\{(1, 2), (2, 3), (3, 4)\}</math> is</p> <p>(1) <math>\{(-1, -2), (-2, -3), (-3, -4)\}</math>          (2) <math>\{(2, 1), (3, 2), (4, 3)\}</math>          (3) <math>\{(1, \frac{1}{2}), (\frac{1}{2}, \frac{1}{3}), (\frac{1}{3}, \frac{1}{4})\}</math>          (4) <math>\{(3, 4), (2, 3), (1, 2)\}</math></p>	<p>4. Rationalize the denominator:</p> $\frac{\sqrt{5} + \sqrt{2}}{\sqrt{2} - \sqrt{5}}$
<p>5. Joanna earns money as a part-time receptionist according to the function <math>j(x) = 8x - 2.35</math> where <math>x</math> is the number of hours she works. Her father suggests that Joanna invest her earnings in a company whose quarterly payout is represented by the function <math>p(x) = 4x + 28</math>. What single function would represent the quarterly value of the investment of all of Joanna's earnings in the company her father recommends?</p>	
<p>6. A pelican flying in the air over water drops a crab from a height of 30 feet. The distance the crab is from the water as it falls can be represented by the function <math>h(t) = -16t^2 + 30</math>, where <math>t</math> is time, in seconds. To catch the crab as it falls, a gull flies along a path represented by the function <math>g(t) = -8t + 15</math>. Can the gull catch the crab before the crab hits the water? Justify your answer.</p>	

7. Which statement describes the graphs of the equations  $x = -1$  and  $3x^2 = 10y^2 + 4$ ?
- (1) They do not intersect.
  - (2) They intersect in the second quadrant, only.
  - (3) They intersect in the third quadrant, only.
  - (4) They intersect in the second and in the third quadrants.

9. If  $a$  varies inversely with  $b$  and  $a$  is multiplied by  $\frac{3}{2}$ , then  $b$  is
- (1) doubled
  - (2) multiplied by  $\frac{2}{3}$
  - (3) halved
  - (4) tripled

8. If the point  $(a, b)$  lies on the graph of  $y = f(x)$ , the graph of  $y = f^{-1}(x)$  must contain point
- (1)  $(0, b)$
  - (2)  $(b, a)$
  - (3)  $(a, 0)$
  - (4)  $(-a, -b)$

10. State the inverse of  $f(x) = \{(1,4), (2,9), (3,5)\}$ .

11. Draw  $f(x) = 2x^2$  and  $f^{-1}(x)$  in the interval  $0 \leq x \leq 2$  on the accompanying set of axes. State the coordinates of the points of intersection.

