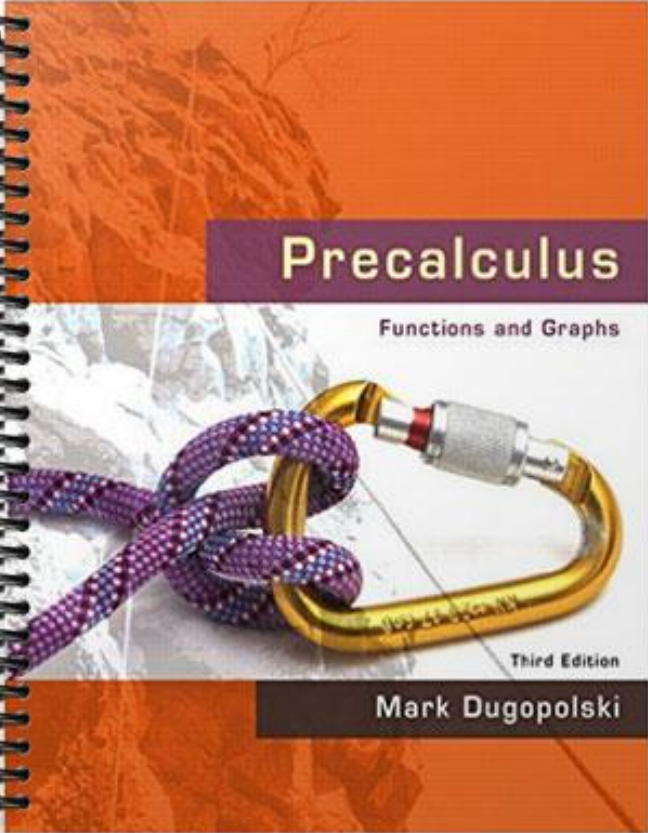


TEST BANK



Precalculus

Functions and Graphs



Third Edition

Mark Dugopolski

Name: _____

Determine whether each equation defines y as a function of x .

1. $x - 3y = 2$

2. $x = y^2 - 2y + 1$

1. _____

2. _____

State the domain and range of each relation.

3. $y = |2x - 3|$

4. $x = \sqrt{y + 1}$

3. domain: _____
range: _____

4. domain: _____
range: _____

Sketch the graph of each function.

5. $x + 2y = 4$

6. $y = \sqrt{x - 1}$

7. $y = -(x - 1)^2 - 2$

8. $f(x) = \begin{cases} x + 1, & \text{for } x < 2 \\ 2 - x, & \text{for } x \geq 2 \end{cases}$

Let $f(x) = x^2 + x$ and $g(x) = 2x + 1$. Find and simplify each of the following expressions.

9. $f(4)$

10. $g^{-1}(x)$

11. $(f \circ g)(2)$

12. $\frac{g(x+h) - g(x)}{h}$

9. _____

10. _____

11. _____

12. _____

Form 2A 14

Solve each problem.

13. State the intervals on which $f(x) = (x + 3)^2 - 1$ is increasing.

13. _____

14. Discuss the symmetry of the graph of the function $f(x) = x^3 - x$.

14. _____

15. State the solution set to the inequality $(x - 1)^2 > 1$ using interval notation.

15. _____

16. Pete's Print Shop charges \$60 for printing 300 business cards and \$80 for printing 500 business cards. What is the average rate of change of the cost of printing as the number of cards goes from 300 to 500?

16. _____

17. The area of a rectangle is 30 square feet. Write the perimeter of this rectangle as a function of the length of one of its sides, x .

17. _____

18. The grade on Walker's math test varies directly with the number of hours he spends studying for the test. If he studies only 2 hours, he makes a 62. What will his score be if he studies for 3 hours?

18. _____