



NAME _____

4th (A)

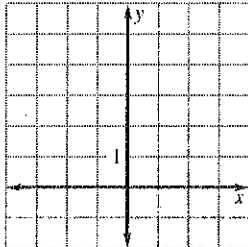
DATE _____

Chapter Test A

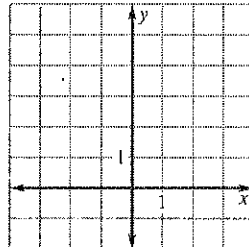
For use after Chapter 4

Graph the quadratic function.

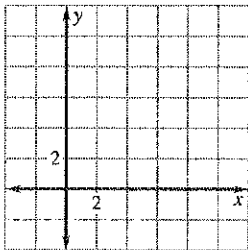
1. $y = x^2$



2. $y = x^2 - 1$



3. $y = x^2 - 10x + 25$

**Solve the quadratic equation by factoring.**

4. $x^2 - 4x = 0$

5. $x^2 - 49 = 0$

6. $3x^2 - 21x + 36 = 0$

Solve the quadratic equation using any appropriate method.

7. $x^2 = 144$

8. $x^2 - 8 = 0$

9. $4(x + 1)^2 = 64$

Simplify the expression.

10. $3 + \sqrt{-4}$

11. $(7 + 8i) - (3 + 6i)$

12. $5 \div (7i)$

Solve the equation.

13. $x^2 = -9$

14. $2y^2 + 6 = y^2$

Find the absolute value of the complex number.

15. $2 + i$

16. $3i - 2$

Solve the equation by completing the square.

17. $x^2 - 4x + 3 = 0$

18. $x^2 + 4x - 3 = 0$

Use the quadratic formula to solve the equation.

19. $x^2 + 10x + 9 = 0$

20. $x^2 + 3x - 5 = 0$

Answers

1. Use grid at left.

2. Use grid at left.

3. Use grid at left.

4. _____

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Chapter Test A

For use after Chapter 8.

Find the discriminant of the equation and give the number and type of solutions of the equation.

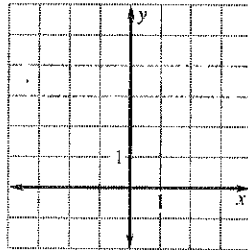
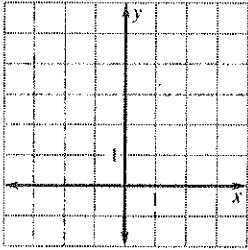
21. $x^2 + 6x - 16 = 0$

22. $2x^2 + 5x - 7 = 0$

Graph the quadratic inequality.

23. $y > x^2$

24. $y \leq 2x^2 - 1$



21. _____

22. _____

23. Use grid at left.

24. Use grid at left.

25. _____

25. **Ball Toss** You toss a ball into the air at a height of 5 feet. The velocity of the ball is 30 feet per second. You catch the ball 6 feet from the ground. Use the model

$$6 = -16t^2 + 30t + 5$$

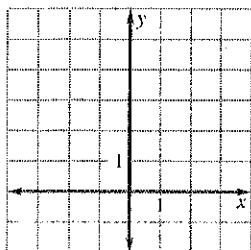
to find how long the ball was in the air.

**Chapter Test B**

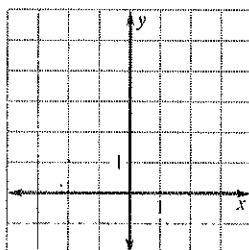
For use after Chapter 10

Graph the quadratic function.

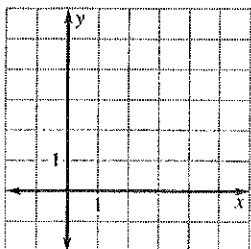
1. $y = x^2 - 1$



2. $y = 2x^2$



3. $y = x^2 - 4x + 4$

**Solve the quadratic equation by factoring.**

4. $x^2 - 8x = 0$

5. $3x^2 - 27 = 0$

6. $2x^2 + 4x - 30 = 0$

Solve the quadratic equation using any appropriate method.

7. $x^2 - 81 = 0$

8. $4x^2 = 48$

9. $4(x + 2)^2 = 16$

Simplify the expression.

10. $4 + \sqrt{-4} + i$

11. $(9 - 7i) - (10 - 6i)$

12. $\frac{3}{7 - i}$

Solve the equation.

13. $x^2 + 1 = -8$

14. $4y^2 + 8 = 2y^2$

Find the absolute value of the complex number.

15. $2 + 4i$

16. $i - 5$

Solve the equation by completing the square.

17. $x^2 - 7x + 12 = 0$

18. $x^2 - 4x + 2 = 0$

Answers

1. Use grid at left.
2. Use grid at left.
3. Use grid at left.
4. _____
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12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Chapter Test B

For use after Chapter 9

Use the quadratic formula to solve the equation.

19. $x^2 - 10x + 21 = 0$

20. $x^2 - 3x + 5 = 0$

Find the discriminant of the equation and give the number and type of solutions of the equation.

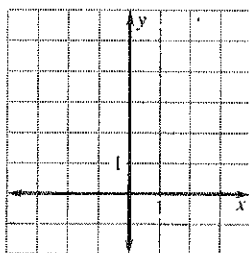
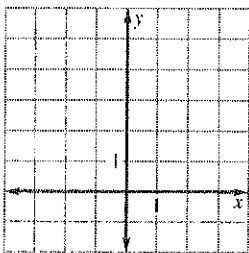
21. $x^2 + 7 = 3x$

22. $4x^2 + 2x - 5 = 0$

Graph the quadratic inequality.

23. $y \geq x^2$

24. $y < 2x^2 - 3$



19. _____

20. _____

21. _____

22. _____

23. Use grid at left.

24. Use grid at left.

25. _____

25. **Vertical Motion** An object is released into the air at an initial height of 6 feet and an initial velocity of 30 feet per second. The object is caught at a height of 7 feet. Use the vertical motion model,

$$h = -16t^2 + vt + s,$$

where h is the height, t is the time in motion, s is the initial height, and v is the initial velocity, to find how long the object is in motion.

5th (A)

Chapter Test A

For use after Chapter 4

Simplify the expression.

1. $\frac{x^5}{x^6}$

2. $(2xy)^3$

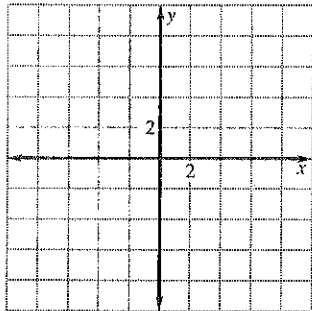
3. $\frac{y^3}{y^{-3}}$

4. $\frac{25x^3y^2}{-5xy}$

Describe the end behavior of the graph of the polynomial function. Then evaluate for $x = -2, -1, 0, 1, 2$. Then graph the function.

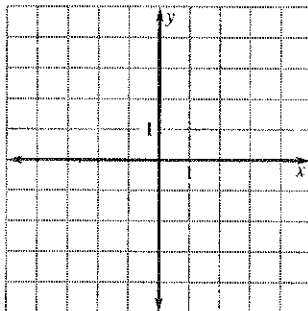
5. $y = 3x^3 - 9x + 1$

x					
y					



6. $y = -x^3 + 4x$

x					
y					



Perform the indicated operation.

7. $(x^2 - x + 1) + (x^2 - x + 1)$

8. $(2x + y)(2x - y)$

9. $(x + 1)(x^2 - x + 1)$

Factor the polynomial.

10. $25x^2 - 1$

11. $x^3 + 1$

12. $12x^4y^3 + 20x^2y^2 - 24x^2y$

Solve the equation.

13. $x^2 = 16$

14. $x^4 - 13x^2 + 36 = 0$

15. $x^3 + 4x^2 - x - 4 = 0$

Answers

1. _____

2. _____

3. _____

4. _____

5. Use grid at left.

6. Use grid at left.

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

Chapter Test A

For use after Chapter 7

Divide. Use synthetic division if possible.

16. $(x^3 - 7x + 6) \div (x - 2)$

17. $(2x^3 + 6x^2 - 8) \div (x - 1)$

List all the possible rational zeros of f using the rational zero theorem. Then find all the zeros of the function.

18. $f(x) = x^2 + 4x + 3$

19. $f(x) = x^3 + x^2 - 10x + 8$

Write a polynomial function of least degree that has real coefficients, the given zeros, and a leading coefficient of 1.

20. $-4, -1, 3$

21. $4, 3$

22. Use technology to approximate the real zeros of
 $f(x) = 0.25x^3 - x^2 + 2$.23. Identify the x -intercepts, local maximum, and local minimum of the graph of $f(x) = \frac{1}{3}(x - 3)^2(x + 3)^2$. ~~Then describe the behavior of the graph.~~24. Show that the ~~n~~ th order finite differences for the function
 $f(x) = x^2 - 4x + 4$ of degree n are nonzero and constant.

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____



Chapter Test B

For use after Chapter 9

Simplify the expression.

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

2. $(x^2y^3)^{-3}$

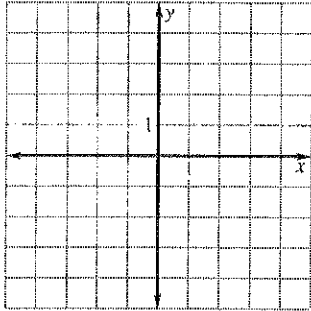
3. $\frac{x^4y^4}{x^{-4}y^{-4}}$

4. $\frac{xy}{1} \cdot (xy)^{-1}$

Describe the end behavior of the graph of the polynomial function. Then evaluate for $x = -2, -1, 0, 1, 2$. Then graph the function.

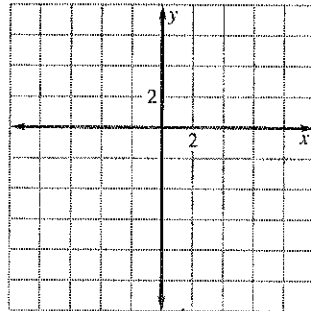
5. $y = -x^3$

x					
y					



6. $y = 2x^3 + x^2 - 8x - 4$

x					
y					



Perform the indicated operation.

7. $(3x^3 - x^2 + 4) - (2x^3 + x^2 + 2)$

8. $(x - 3y)(x - 4y)$

9. $(x + 1)(2x^2 - x + 1)$

Factor the polynomial.

10. $100x^2 - 9y^2$

11. $y^3 - 1$

12. $15x^3y^3 + 10x^2y^2 + 5xy$

Solve the equation.

13. $x^2 = 81$

14. $5x^3 = 30x - 25x^2$

15. $x(x + 5)(x - 4) = x^3$

Answers

1. _____

2. _____

3. _____

4. _____

5. Use grid at left.

6. Use grid at left.

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

Chapter Test B

For use after Chapter 4

Divide. Use synthetic division if possible.

16. $(x^3 - 28x - 48) \div (x + 4)$

17. $(2x^3 + 11x^2 + 18x + 9) \div (x + 3)$

List all the possible rational zeros of f using the rational zero theorem. Then find all the zeros of the function.

18. $f(x) = x^2 - 6x + 5$

19. $f(x) = x^3 + x^2 - 10x + 8$

Write a polynomial function of least degree that has real coefficients, the given zeros, and a leading coefficient of 1.

20. 4, -5

21. -2, 2, 3

22. Use technology to approximate the real zeros of
 $f(x) = 0.35x^3 - 2x^2 + 8$.23. Identify the x -intercepts, the local maximum, and local minimum of the graph of $f(x) = \frac{1}{4}(x - 2)^2(x + 2)^2$. ~~Then describe the behavior of the graph.~~24. Show that the n th-order finite differences for the function
 $f(x) = -x^3 + 4x$ of degree n are nonzero and constant.

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____



Chapter Test A

For use after Chapter 6

Evaluate the expression without using a calculator.

1. $\sqrt[3]{-8}$ 2. $25^{1/2}$ 3. $27^{2/3}$ 4. $8^{-1/3}$

Simplify the expression. Assume all variables are positive.

5. $(2^{1/3} \cdot 3^{1/3})^3$ 6. $\sqrt[3]{8x^3y^6z^3}$ 7. $\frac{x^3y^3}{(xy)^{-3}}$ 8. $\sqrt{50} + \sqrt{8}$

Perform the indicated operation and state the domain. Let

$f(x) = 3x$ and $g(x) = x - 5$.

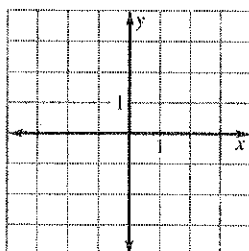
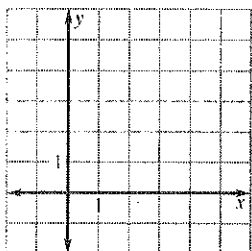
9. $f(x) + g(x)$ 10. $f(x) - g(x)$ 11. $f(x) \cdot g(x)$
 12. $\frac{f(x)}{g(x)}$ 13. $f(g(x))$

Find the inverse function.

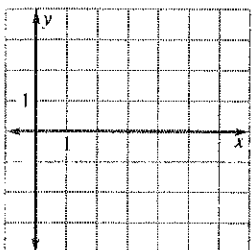
14. $f(x) = x + 9$ 15. $f(x) = \frac{1}{2}x + 2$
 16. $f(x) = 3x + 6$

Graph the function. ~~Then state the domain and range.~~

17. $f(x) = \sqrt{x}$ 18. $f(x) = x^{1/3}$



19. $g(x) = \sqrt{x - 3}$



Answers

1. _____
2. _____
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8. _____
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11. _____
12. _____
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14. _____
15. _____
16. _____
17. Use grid at left.

18. Use grid at left.

19. Use grid at left.

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