Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form A

Select the best answer.

1. Order the numbers 0, −11, 0.1, 0.03 from least to greatest.

A −11, 0, 0.03, 0.1

B 0, 0.1, 0.03, −11

C −11, 0, 0.1, 0.03

D 0, 0.03, 0.1, −11

2. Use interval notation to represent the set of all real numbers greater than 2 and less than 8.

A $(8, 2)$

B $(2, 8)$

3. Identify the property demonstrated by $6 + 9 = 9 + 6$.

A Distributive Property

B Additive Inverse Property

C Commutative Property

D Associative Property

4. Use mental math to find the 10% tax on a $3.70 purchase.

A $0.37

B $37.00

5. Estimate $\sqrt{37}$ to the nearest integer.

A 5

B 6

C 7

D 37

6. Simplify $\frac{1}{\sqrt{5}}$.

A $\frac{\sqrt{5}}{5}$

B $\frac{5}{\sqrt{5}}$

7. Simplify $4\sqrt{7} + \sqrt{7}$.

A $4\sqrt{14}$

B 28

C $5\sqrt{7}$

D 35

8. Evaluate $3x - y$ for $x = 4$ and $y = 7$.

A 5

B 17

9. Simplify $5x + 2x$.

A $7x$

B 7

C $3x$

D $7x^2$

10. Evaluate 5^0.

A 0

B 1

11. Simplify $\left(x^3\right)^2$.

A x^5

B x^6

C x^9

D x^{32}

12. Evaluate $\frac{3 \times 10^8}{6 \times 10^3}$ and write the answer using scientific notation.

A 5×10^4

B 0.5×10^5

13. What is the domain of the set of ordered pairs $\{(1, 6), (2, 7), (3, 6), (4, 4), (5, 4)\}$?

A $\{1, 2, 3, 4, 5\}$

B $\{4, 6, 7\}$

C natural numbers

D $\{6, 7, 6, 4, 4\}$

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form A continued

14. The set of output values for a relation is called the

A domain.

B range.

15. Evaluate $f(x) = 6x + 2$ for $f(0)$.

A 2

B 6

16. Which function's output is 3 times the input plus 7?

A $f(x) = (3x + 7)(x)$

B $f(x) = (3x + 7)$

C $f(x) = 7 + 3$

D $f(x) = 7x + 3$

17. What are the coordinates of the point $(1, 2)$ after a translation right 9 units and up 3 units?

A $(10, 5)$

B $(10, -1)$

C $(-8, 5)$

D $(4, 11)$

18. The graph of a function passes through the points $(2, 4)$ and $(6, -5)$. What are the coordinates of these points after the function has been reflected across the x-axis?

A $(-2, -4)$ and $(-6, 5)$

B $(-2, -4)$ and $(-6, -5)$

C $(2, -4)$ and $(6, 5)$

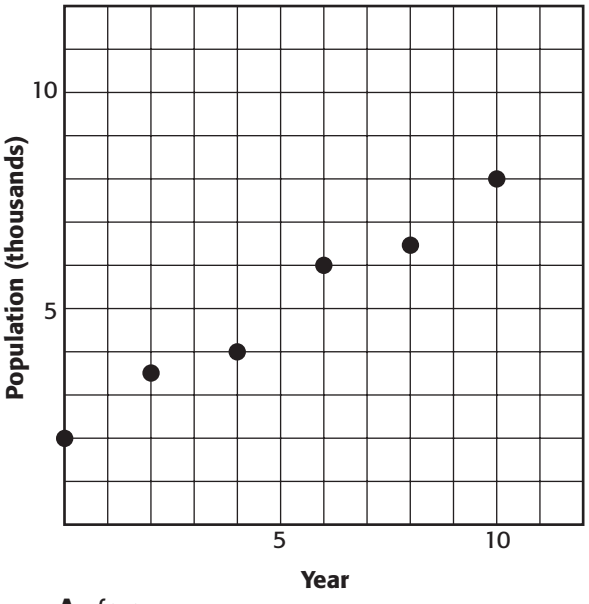
D $(4, 2)$ and $(-5, 6)$

19. What is the parent function for $f(x) = (x + 7)^2$?

A $f(x) = x$

B $f(x) = x^2$

20. Data gathered about the growth of a population is represented in the graph. What parent function best approximates the data?



A $f(x) = c$

B $f(x) = x^2$

C $f(x) = x$

D $f(x) = x$

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form B

Select the best answer.

1. Order the numbers $\sqrt{2}$, $\frac{3}{2}$, -1.45, $1.\overline{5}$, 0 from least to greatest.

A $0, \sqrt{2}, -1.45, \frac{3}{2}, 1.\overline{5}$

B $-1.45, 0, \sqrt{2}, 1.\overline{5}, \frac{3}{2}$

C $-1.45, 0, \sqrt{2}, \frac{3}{2}, 1.\overline{5}$

D $-1.45, 0, \frac{3}{2}, 1.\overline{5}, \sqrt{2}$

2. Use interval notation to represent $-2 \leq x < 8$.

F $\{x \mid -2 \leq x < 8\}$

G $[-2, 8)$

H $(-2, 8)$

J $[-8, 2)$

3. Identify the property demonstrated by $3 + (4 + 5) = (3 + 4) + 5$.

A Associative Property

B Commutative Property

C Distributive Property

D Additive Identity Property

4. Use mental math to find the 15% tip for a \$12.40 restaurant bill.

F \$0.62 **H** \$1.86

G \$1.24 **J** \$186.00

5. Estimate $\sqrt{47}$ to the nearest tenth.

A 5.9 **C** 6.9

B 6.7 **D** 7

6. Simplify $\frac{2\sqrt{3}}{\sqrt{5}}$.

F $\frac{6}{\sqrt{15}}$ **H** $2\sqrt{15}$

G $\frac{2\sqrt{3}}{5}$ **J** $\frac{2\sqrt{15}}{5}$

7. Simplify $4\sqrt{5} + \sqrt{20}$.

A $4\sqrt{25}$

B $4\sqrt{100}$

C $4\sqrt{5} + 2\sqrt{5}$

D $6\sqrt{5}$

8. Evaluate $3x + xy - 2y$ for $x = 3$ and $y = 5$.

F 14 **H** 24

G 16 **J** 34

9. Simplify $x(5x + 2) - 2y + 6x^2$.

A $11x^2$

B $13x^2 - 2y$

C $11x^2 + 2x - 2y$

D $11x^2xy$

10. Evaluate 3^{-2}.

F -6 **H** $\frac{1}{6}$

G $\frac{1}{9}$ **J** 9

11. Simplify $\left(\frac{4x^3y}{x^9}\right)^2$. Assume all variables are nonzero.

A $\frac{16y^2}{x^6}$ **C** $\frac{4y^2}{x^{12}}$

B $\frac{16y^2}{x^{12}}$ **D** $\frac{16x^6y^2}{x^{18}}$

12. Evaluate the expression $\frac{6.0 \times 10^{-8}}{8.0 \times 10^{-3}}$ and write the answer using scientific notation.

F 0.0000075 **H** 7.5×10^{-12}

G 7.5×10^{-6} **J** 0.75×10^{-5}

13. What is the range of the relation shown in the table?

Number of Letters in the Names of the Days of the Week					
Day	MO	TU	WE	TH	FR
Number	6	7	9	8	6

A {6, 7, 8, 9}

B {MO, TU, WE, TH, FR}

C {6, 7, 9, 8, 6}

D natural numbers

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form B continued

14. Which of the following relations is **not** a function?

F From student to birthday

G From student to current Grade Point Average

H From student to score on this test

J From student to test scores last year

15. Evaluate $f(x) = 3x + 8$ for $f(-4)$.

A -20 **C** -4

B -12 **D** 20

16. Which function D represents the number of days it takes to travel 3,200 miles at an average rate of n miles per day?

F $D(n) = 3{,}200 + n$

G $D(n) = \frac{3{,}200}{n}$

H $D(n) = \frac{n}{3{,}200}$

J $D(n) = 3{,}200 \cdot n$

17. The points $\{(-2, 1), (0, 3), (1, 2)\}$ are on the graph of function f. What are the coordinates of these three points after a vertical stretch by a factor of 2?

A $\{(-4, 1), (0, 3), (2, 2)\}$

B $\left\{\left(-2, \frac{1}{2}\right), \left(0, \frac{3}{2}\right), (1,1)\right\}$

C $\left\{(-1,1), (0, 3), \left(\frac{1}{2}, 2\right)\right\}$

D $\{(-2, 2), (0, 6), (1, 4)\}$

18. The graph of a function passes through the points $(4, -2)$ and $(6, 8)$. What are the coordinates of these points after the function has been stretched horizontally by a factor of 2?

F $(2, -2)$ and $(3, 8)$

G $(4, -4)$ and $(6, 16)$

H $(8, -2)$ and $(12, 16)$

J $(8, -2)$ and $(12, 8)$

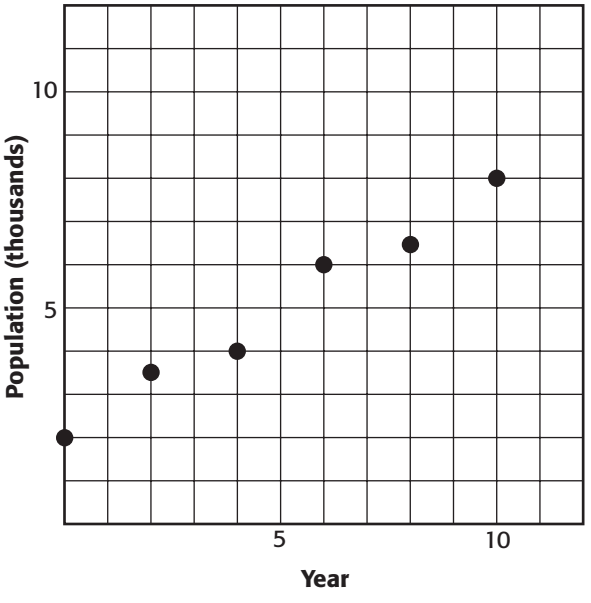
19. Which parent function best approximates this data set?

x	-4	-2	0	1	3
y	4	1	0	$\frac{1}{4}$	$\frac{9}{4}$

A $f(x) = x^2$ **C** $f(x) = x^3$

B $f(x) = x$ **D** $f(x) = c$

20. Data gathered about the growth of a population is represented in the graph. Use the parent function that best approximates the data to predict the population in year 12.



F About 9.2

G About 16.7

H About 9,200

J About 16,700

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test
Form C

Select the best answer.

1. Order the numbers π, 3, $-\frac{10}{3}$, $\sqrt{3}$, $3.\overline{1}$ from least to greatest.

A $\sqrt{3}$, 3, $3.\overline{1}$, π, $-\frac{10}{3}$

B $-\frac{10}{3}$, $\sqrt{3}$, 3, $3.\overline{1}$, π

C $-\frac{10}{3}$, $\sqrt{3}$, 3, π, $3.\overline{1}$

D $-\frac{10}{3}$, 3, $\sqrt{3}$, $3.\overline{1}$, π

2. Use interval notation to represent $\{x \mid -2 \leq x < 8 \text{ or } 10 \leq x < \infty \text{ and } x \in \mathbb{R}\}$.

F $[-2, 8)$ or $[10, \infty)$

G $(-2, 8)$ or $(10, \infty)$

H $[-2, \infty)$

J $[-2, 8)$ or $[10, \infty)$

3. Identify the property demonstrated by $5(4 + 7) = 20 + 35$.

A Associative Property

B Distributive Property

C Multiplicative Identity Property

D Multiplicative Inverse Property

4. Use mental math to find the 35% discount on a $25.00 purchase.

F $1.25

G $2.50

H $7.50

J $8.75

5. Estimate $\sqrt{147}$ to the nearest tenth.

A 11.8

B 12

C 12.1

D 12.4

6. Simplify $\frac{3}{\sqrt{6}} + \frac{\sqrt{6}}{3}$.

F $\frac{5\sqrt{6}}{6}$

G $\frac{5}{\sqrt{6}}$

H 1

J 5

7. Simplify $\sqrt{80} + \sqrt{20}$.

A 10

B $6\sqrt{10}$

C $3\sqrt{20}$

D $6\sqrt{5}$

8. Evaluate $3x^2 + xy^2 - \frac{10}{y}$ for $x = 3$ and $y = 5$.

F 22

G 100

H $\frac{350}{3}$

J 250

9. Simplify $y(5x^2 + 2x) - x(2y - 6xy)$.

A $-x^2y$

B $y5x^2 + x6xy$

C $11x^2y + 4xy$

D $11x^2y$

10. Evaluate $\left(-\frac{1}{3}\right)^{-2}\left(\frac{1}{3^0}\right)^{-1}$.

F -9

G 0

H 9

J 27

11. Simplify $\left[\left(\frac{4x^3y}{x^9}\right)\left(\frac{x}{y^{-2}}\right)\right]^3$. Assume all variables are nonzero.

A $\frac{64y^9}{x^{17}}$

B $\frac{64}{x^{15}y^3}$

C $64x^{39}y^9$

D $\frac{64y^9}{x^{15}}$

12. Evaluate the expression $(6.0 \times 10^{-8})^2$ and write the answer using scientific notation.

F 6.0×10^{-16}

G 3.6×10^{-15}

H 36×10^{-16}

J 6.0×10^{-6}

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form C continued

13. What is the range of the function $f(x) = x^2 + 5$, where the domain of f is the real numbers?

A $[0, \infty)$

B $[0, 5)$

C real numbers

D $[5, \infty)$

14. Which relation is **not** a function?

F $\{(2, \sqrt{3}), (3, \sqrt{2}), (4, \sqrt{3}), (5, \sqrt{3})\}$

G $\{(2, 2), (3, 3), (4, 4), (5, 5)\}$

H $\{(2, 1), (3, 2), (\sqrt{4}, 5), (4, 5)\}$

J $\{(2, 5), (3, 4), (4, 3), (5, 2)\}$

15. Evaluate $f(x) + 3x + 8$ for $f(-4h)$.

A -12

B -4

C $-12h$

D $-12h + 8$

16. The cost to host a dinner at a banquet hall is \$750 plus \$20 for each guest's meal. Which function $c(g)$, where g is the number of guests, represents the total cost for a dinner with g guests?

F $c(g) = 750 + 20g$

G $c(g) = 20g$

H $c(g) = 750 + 20c$

J $c(g) = 750g + 20$

17. The points $\{(-3, 2), (0, 1), (4, 5)\}$ are on the graph of function f. What are the coordinates of these three points after a horizontal stretch by a factor of 3, followed by a reflection across the x-axis?

A $\{(-9, -2), (0, -1), (12, -5)\}$

B $\left\{(-1, -2), (0, -1), \left(\frac{4}{3}, -5\right)\right\}$

C $\{(-9, 2), (0, 1), (12, 5)\}$

D $\{(-3, -6), (0, -3), (4, -15)\}$

18. The graph of a function passes through the points $(8, -4)$ and $(-12, 14)$. What are the coordinates of these points after the function has been stretched horizontally by a factor of 2, then reflected across the y-axis?

F $(-16, -4)$ and $(24, 14)$

G $(8, -4)$ and $(12, 14)$

H $(16, -8)$ and $(-24, 28)$

J $(16, -4)$ and $(24, 14)$

19. Which parent function best approximates this data set?

x	-4	-2	0	1	3
y	-16	-4	0	$\frac{1}{2}$	$\frac{27}{2}$

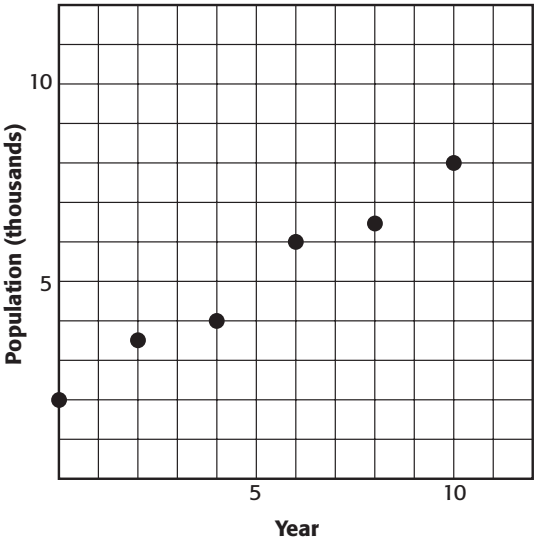
A $f(x) = x$

B $f(x) = x^3$

C $f(x) = \sqrt{x}$

D $f(x) = x^2$

20. Data gathered about the growth of a population is represented in the graph. Use the parent function that best approximates the data to predict when the population will reach 10,000.



F About year 13.3

G About year 16.7

H About year 20

J About year 16,663

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form A

1. Order the numbers 2, -0.04, -3, 0 from least to greatest.

_____

2. Rewrite $3 \leq x < 6$ using interval notation.

_____

3. Circle the property that is demonstrated by the expression $ab = ba$.

Additive Inverse Property

Associative Property

Commutative Property

4. Use mental math to find the 10% tax for a $4.30 purchase.

_____

5. Estimate $\sqrt{29}$ to the nearest integer.

_____

Simplify.

6. $\frac{5}{\sqrt{3}}$

_____

7. $3\sqrt{11} - \sqrt{11}$

_____

8. Evaluate $5y - 2x$ for $x = 4$ and $y = 2$.

_____

9. Simplify $2x(4y + 5) - 8xy$.

_____

10. Evaluate 2^3.

_____

11. Simplify $-6x^6 (x^2)$.

_____

12. Evaluate $\frac{1 \times 10^9}{4 \times 10^2}$ Write the answer in scientific notation.

_____

13. Give the domain and range for the set of ordered pairs $\{(0, 1), (1, 1), (2, 3), (7, 2), (-5, 1)\}$.

_____

14. Determine whether the relation is a function.

from last name to number of letters in last name

_____

15. Evaluate $f(x) = 6x$ for $f(0)$, $f\left(\frac{1}{2}\right)$, and $f(-2)$.

_____

16. Tomatoes at a grocery store cost $3 per pound. Write a function to represent the total cost of p pounds of tomatoes. What is the value of the function for an input of 4, and what does it represent?

_____

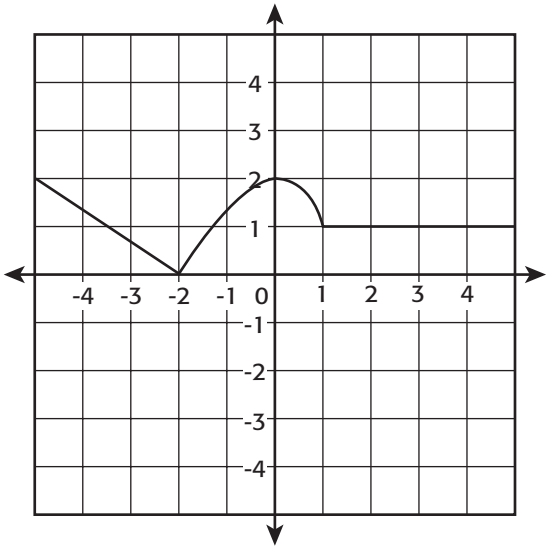
Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form A continued

17. Use a table to perform a translation of $y = f(x)$ right 2 units and up 3 units. Graph using the same coordinate plane as the original function.



x	y	$x + 2$	$y + 3$
−5	2	−3	5
−2	0	0	3
0	2		

18. The graph of a function passes through the points $(3, -2)$ and $(7, -5)$. What are the coordinates of these points after the function has been reflected across the y-axis?

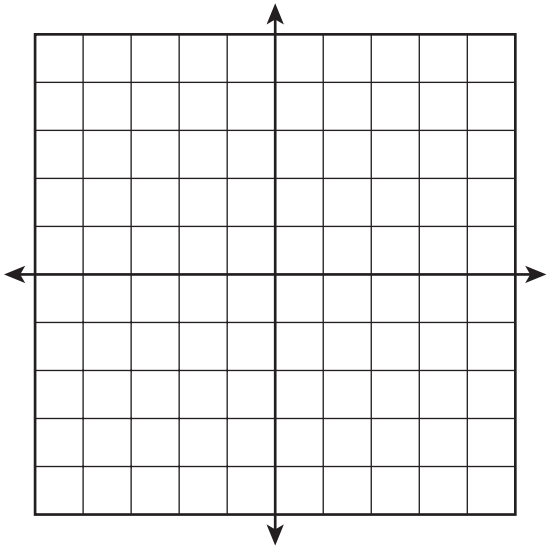
_____

19. Identify the parent function for $f(x) = (x - 12)^3$.

_____

20. Graph the relationship from time to number of organisms living in a petri dish during the course of an experiment. Identify the parent function that best approximates the data.

Organisms in Petri Dish					
Time (h)	0	1	2	3	4
No. of Organisms	4	8	11	12	16



_____

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form B

1. Order the numbers $-\sqrt{2}$, $-\frac{3}{2}$, 1.45, $1.\overline{3}$, 0 from least to greatest.

2. Rewrite $-17 \leq x \leq 12$ using interval notation.

3. Identify the property demonstrated by the expression $(5 \cdot 6)3 = 5(6 \cdot 3)$.

4. Use mental math to find a 15% tip for a $22.80 restaurant bill.

5. Estimate $\sqrt{34}$ to the nearest tenth.

Simplify.

6. $\frac{5\sqrt{7}}{\sqrt{6}}$

7. $5\sqrt{6} - \sqrt{24}$

8. Evaluate $3y + 5xy - x$ for $x = 4$ and $y = 2$.

9. Simplify $3x(5y + 4) - 2xy - 10x + 6x^2$.

10. Evaluate 5^{-3}.

11. Simplify $\left(\frac{-2x^4y^7}{x^5}\right)^3$. Assume all variables are nonzero.

12. Evaluate $\frac{2.0 \times 10^{-7}}{8.0 \times 10^{-9}}$. Write the answer in scientific notation.

13. Give the domain and range for the relation.

Number of Days in February					
Year	2000	2001	2002	2003	2004
Number	29	28	29	28	29

14. Determine whether the relation is a function.

from last name to age

15. Evaluate $f(x) = 8 - 4x$ for $f(0)$, $f\left(\frac{1}{2}\right)$, and $f(-2)$.

16. A commuter has $75. Each day's commute costs $3.50. Write a function to represent the total amount the commuter has remaining after d days. What is the value of the function for an input of 5, and what does it represent?

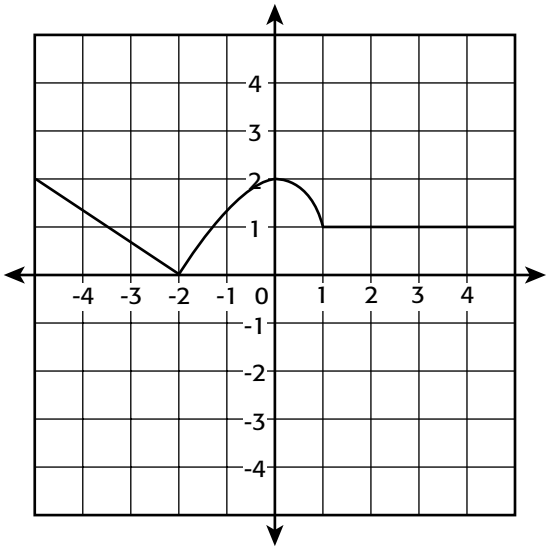
Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form B continued

17. Use a table to perform a vertical stretch of $y = f(x)$ by a factor of 2. Graph using the same coordinate plane as the original function.



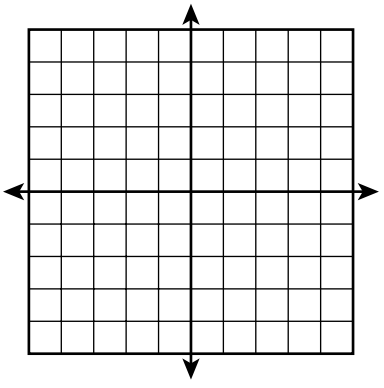
x	*y*		

18. The graph of a function passes through the points $(9, -6)$ and $(12, -3)$. What are the coordinates of these points after the function has been compressed vertically by a factor of $\frac{1}{3}$?

_____

19. Graph the data from the table. Describe the parent function and the transformation that best approximates the data set.

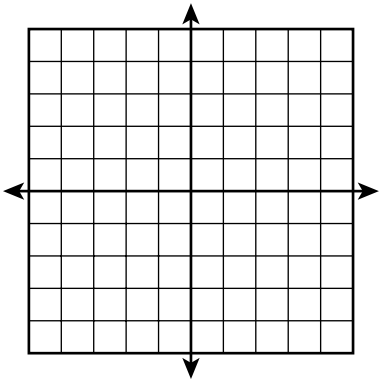
x	−4	−2	0	1	3
y	21	9	5	6	14



_____

20. Graph the relationship from time to number of organisms living in a petri dish during the course of an experiment. Use the parent function that best approximates the data to predict the number of organisms living in the dish at hour 6.

Organisms in Petri Dish					
Time (*h*)	0	1	2	3	4
No. of Organisms	4	8	11	12	16



_____

Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form C

1. Order the numbers $\sqrt{2}$, $1 - \sqrt{2}$, $\frac{1}{\sqrt{2}}$, $1 - \frac{1}{\sqrt{2}}$, 0 from least to greatest.

2. Rewrite $\{x \mid -1 \leq x < 0 \text{ or } 0 < x < 1 \text{ and } x \in \mathbb{R}\}$ using interval notation.

3. Identify the properties demonstrated by the expression $a\left(b + \frac{1}{a}\right) = 1 + ab$.

4. Use mental math to find the total cost of an item originally priced at \$86.00 after a 55% discount and 10% sales tax added to the discounted price.

5. Estimate $\sqrt{135}$ to the nearest tenth.

Simplify.

6. $\frac{\sqrt{6}}{\sqrt{2} \cdot \sqrt{5}}$

7. $\frac{\sqrt{200} - \sqrt{32}}{2}$

8. Evaluate $\frac{-2x^2y}{y^3 - y}$ for $x = 5$ and $y = -3$.

9. Simplify $\frac{3y}{x^{-1}} - (2x - y)(-3x)$.

10. Evaluate $-\left(\frac{-3}{(-2)^{-2}}\right)^{-1}$.

11. Simplify $\left(\frac{3x^2y^7}{(x^2y)^5}\right)^3$. Assume all variables are nonzero.

12. Evaluate $(3.2 \times 10^{-8})(5.0 \times 10^3)$. Write the answer in scientific notation.

13. Give the domain and range for the function $f(x) = \frac{1}{x^2}$.

14. Find the values of a for which $\{(3a, 2), (a + 2, 5), (6, 7)\}$ is a function.

15. Evaluate $f(x) = 3 - 6x$ for $f(0)$, $f\left(\frac{1}{2}\right)$, and $f(h + 4)$.

16. A car is 35 miles east of a given point. It begins to travel 25 miles per hour east. Write a function to represent the total distance east of the original point the car is after h hours. What is the value of the function for an input of 3, and what does it represent?

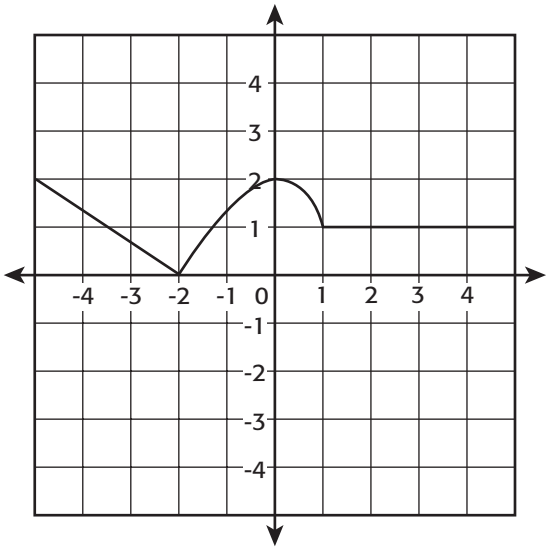
Name _____ Date _____ Class _____

CHAPTER 1

Chapter Test

Form C continued

17. Use a table to perform a horizontal stretch of $y = f(x)$ by a factor of 2, followed by a reflection across the x-axis. Graph using the same coordinate plane as the original function.



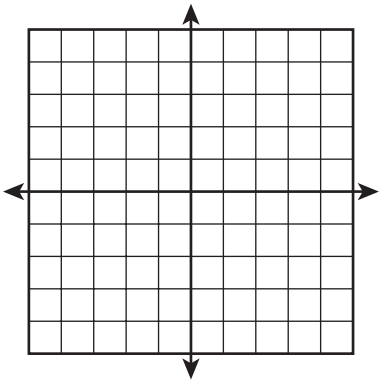
x	*y*		

18. The graph of a function passes through the points $(6, -3)$ and $(-12, -15)$. What are the coordinates of these points after the function has been compressed vertically by a factor of $\frac{1}{3}$, then reflected across the x-axis?

_____

19. Graph the data from the table. Describe the parent function and the transformation that best approximates the data set.

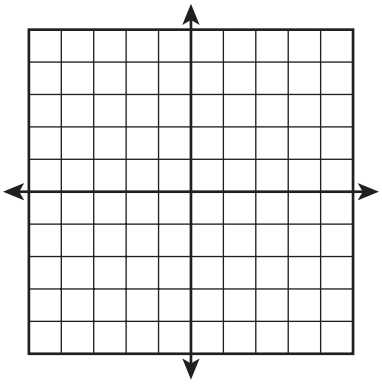
x	−4	−2	0	1	3
y	−4	0	−4	−9	−25



_____

20. Graph the relationship from time to number of organisms living in a petri dish during the course of an experiment. Use the parent function that best approximates the data to predict when the number of organisms will reach 26.

Organisms in Petri Dish					
Time (*h*)	0	1	2	3	4
No. of Organisms	4	8	11	12	16



_____

11. C

12. H

Section Quiz: Section B

1. C

2. H

3. B

4. J

5. A

6. H

7. B

Chapter Test Form A

1. A

2. B

3. C

4. A

5. B

6. A

7. C

8. A

9. A

10. B

11. B

12. A

13. B

14. B

15. A

16. B

17. A

18. C

19. B

20. C

Chapter Test Form B

1. C

2. G

3. A

4. H

5. C

6. J

7. D

8. F

9. C

10. G

11. B

12. G

13. A

14. J

15. C

16. G

17. D

18. J

19. A

20. H

Chapter Test Form C

1. B

2. F

3. B

4. J

5. C

6. F

7. D

8. G

9. D

10. H

11. D

12. G

13. D

14. H

15. D

16. F

17. A

18. F

19. B

20. F

Chapter Test Form A

1. $-3, -0.04, 0, 2$

2. [3, 6)

3. Commutative Property

4. \$0.43

5. 5

6. $\frac{5\sqrt{3}}{3}$

7. $2\sqrt{11}$

8. 2

9. $10x$

10. 8

11. $-6x^4$

12. 2.5×10^6

13. D: $\{-5, 0, 1, 2, 7\}$ R: $\{1, 2, 3\}$

14. function

15. $f(0) = 0$, $f\left(\frac{1}{2}\right) = 3$, $f(-2) = -12$

16. $C(p) = 3p$, $C(4) = 12$, the cost of 4 pounds of tomatoes

17. graph should be translated right 2 units and up 3 units

18. $(-3,-2)$ and $(-7,-5)$

19. quadratic

20. linear $(y = 3x + 4)$

Chapter Test Form B

1. $-\frac{3}{2}, -\sqrt{2}, 0, 1.\overline{3}, 1.45$

2. $[-17, 12]$

3. Associative Property

4. \$3.42

5. 5.8

6. $\frac{5\sqrt{42}}{6}$

7. $3\sqrt{6}$

8. 42

9. $13xy + 2x + 6x^2$

10. $\frac{1}{125}$

11. $\frac{8y^{21}}{x^3}$

12. 2.5×10^1

13. D: {2000, 2001, 2002, 2003, 2004}
R: {28, 29}

14. not a function

15. $f(0) = 8$, $f\left(\frac{1}{2}\right) = 6$, $f(-2) = 16$

16. $T(d) = 75 - 3.5d, T(5) = 57.5$, the amount remaining after 5 days

17. y coordinates of graph should be doubled

18. $(9,-2)$ and $(12,-1)$

19. quadratic, translated 5 units up

20. about 22

Chapter Test Form C

1. $1 - \sqrt{2}, 0, 1 - \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, \sqrt{2}$

2. $[-1, 0)$ or $(0, 1)$

3. Distributive, multiplicative inverse, and commutative properties

4. \$42.57

5. 11.6

6. $\frac{\sqrt{15}}{5}$

7. $3\sqrt{2}$

8. $-\frac{75}{12}$

9. $10x$

10. $\frac{1}{12}$

11. $\frac{27y^6}{x^{24}}$

12. 1.6×10^{-4}

13. D: $\{x \mid x \neq 0\}$ R: $\{0 < f(x) < \infty\}$

14. $a \neq 2$, $a \neq 4$, $a \neq 1$

15. $f(0) = 3$, $f\left(\frac{1}{2}\right) = 0$, $f(h + 4) = -6h - 21$

16. $T(h) = 35 + 25h$, $T(3) = 110$, total miles east after 3 hours

17. graph should have x-coordinates doubled and negative of y-coordinates

18. $(6, 1)$ and $(-12, 5)$

19. quadratic, translated left 2 units and reflected across x-axis

20. about hour 7.3

Performance Assessment

1. $f(x) = 6x^2$

2. Domain $x > 0$, $x \in \square$, Range $y > 0$, $y \in \square$.

3. The parent function is the quadratic function.

4. It represents the total area of the squares if the side of one of the smaller squares measures 200 ft.

5. $f(200) = 2.4 \times 10^5$

Cumulative Test

1. C

2. G

3. A

4. H

5. B

6. J

7. C

8. F

9. D

10. G

11. D

12. F

13. B

14. H

15. D

16. H

17. B

18. F

19. A

20. J

21. B

22. J

23. C

24. H

25. B

26. H

27. A

28. G

29. C

30. H

31. A

32. G

33. D

34. J

35. D

36. G

37. C

38. H