Name _____ Date _____ Class _____

TEKS 2A.1.B

LESSON 9-6

Practice B

Modeling Real-World Data

Use constant differences or ratios to determine which parent function would best model the given data set.

1.

x	12	16	20	24	28
y	0.8	3.6	16.2	72.9	328.05

_____

2.

x	13	19	25	31	37	43
y	–1	17	35	53	71	89

_____

3.

x	2	7	12	17	22
y	−100	−55	40	185	380

_____

4.

x	0.10	0.37	0.82	1.45	2.26
y	0.3	0.6	0.9	1.2	1.5

_____

Write a function that models the data set.

5.

x	2.2	2.6	3.0	3.4	3.8
y	0.68	4.52	9.0	14.12	19.88

_____

6.

x	−5	0	5	10	15	20
y	8	6	4	2	0	−2

_____

7.

x	0.3	0.7	1.1	1.5	1.9
y	2.5	3	3.6	4.32	5.184

_____

8.

x	0.06	0.375	0.96	1.815	2.94
y	0.2	0.5	0.8	1.1	1.4

_____

9.

x	−6	1	8	15	22
y	15	1	30.12	102.36	217.72

_____

10.

x	0.32	2.07	4.8	8.51	13.2
y	0.9	1.6	2.3	3.0	3.7

_____

Solve.

11. The table shows the population growth of a small town.

Years after 1974	1	6	11	16	21	26	31
Population	662	740	825	908	1003	1095	1200

a. Write a function that models the data. _____

b. Use your model to predict the population in 2020. _____

Name _____ Date _____ Class _____

TEKS 2A.1.B

LESSON 9-6

Practice B

Modeling Real-World Data

Use constant differences or ratios to determine which parent function would best model the given data set.

1.

x	12	16	20	24	28
y	0.8	3.6	16.2	72.9	328.05

Exponential

2.

x	13	19	25	31	37	43
y	–1	17	35	53	71	89

Linear

3.

x	2	7	12	17	22
y	−100	−55	40	185	380

Quadratic

4.

x	0.10	0.37	0.82	1.45	2.26
y	0.3	0.6	0.9	1.2	1.5

Square root

Write a function that models the data set.

5.

x	2.2	2.6	3.0	3.4	3.8
y	0.68	4.52	9.0	14.12	19.88

$f(x) = 2x^2 - 9$

6.

x	−5	0	5	10	15	20
y	8	6	4	2	0	−2

$f(x) = -0.4x + 6$

7.

x	0.3	0.7	1.1	1.5	1.9
y	2.5	3	3.6	4.32	5.184

$f(x) = 2.18(1.577)^x$

8.

x	0.06	0.375	0.96	1.815	2.94
y	0.2	0.5	0.8	1.1	1.4

$f(x) = 0.816\sqrt{x}$

9.

x	−6	1	8	15	22
y	15	1	30.12	102.36	217.72

$f(x) = 0.44x^2 + 0.2x + 0.36$

10.

x	0.32	2.07	4.8	8.51	13.2
y	0.9	1.6	2.3	3.0	3.7

$f(x) = 1.318x^{0.378}$

Solve.

11. The table shows the population growth of a small town.

Years after 1974	1	6	11	16	21	26	31
Population	662	740	825	908	1003	1095	1200

a. Write a function that models the data. $f(x) = 657.3(1.02)^x$

b. Use your model to predict the population in 2020. 1634 people