

Name:

2

Test #

3

CA

Date:

Key

1.

$x$	$+3x$	$-4$
$x^3$	$+3x^2$	$-4x$
$-5x^2$	$-15x$	$+20$

$$x^3 - 2x^2 - 19x + 20$$

2

6.

$$\frac{4x^2}{4} = \frac{64}{4} \quad x^2 - 16 = 0$$

$$x^2 = 16 \quad (x+4)(x-4) = 0$$

$$x = -4, 4$$

3

2.

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

$$(x-2)(x+3)(x-3)$$

$$\{2, -3, 3\}$$

1

7.

$$y = 1.5x + 4.75$$

rate/ml      flat fee

3

3.

$$F = \frac{9}{5}C + 32$$

$$F - 32 = \frac{9}{5}C$$

$$\frac{5F - 160}{9} = C$$

3

8.

25 scores  
13<sup>th</sup> score is median  
in  $\boxed{86-90}$

4

4.

$$f(x) = \frac{1}{x^2-9} \quad x^2-9 \neq 0$$

$$x^2 \neq 9$$

$$x \neq \pm 3$$

$$x \neq \pm 3$$

2

9.

68, 72, 77, 80, 90, 94, 94  
IQR = 101 - 73 = 28

101, 112, 120  
↑ Q3

2

5.

$$f(x) = \begin{cases} 3x^2 + x - 1, & x \geq 1 \\ 2x, & x < 1 \end{cases}$$

$$f(2) = 3(2)^2 + (2) - 1$$

$$= 3 \cdot 4 + 2 - 1$$

$$12 + 2 - 1$$

4

10.

$$h(t) = -4.9t^2 + 180t + 100$$

100 ft

3

13

x=cookie y=lollipop

11.  $-2x^2 - 5x + 3$   
 $+ -4x^2 + 4x - 6$   
 $\boxed{-6x^2 - x - 3}$

2

16.  $x + 2y = 2.50$   
 $-(x + 4y = 3.00)$   
 $\hline -2y = -0.50 \quad y = 0.25$

1

12. not causal  
 car color and #  
 of accidents

1

17.  $x = a^2$   
 $b$   
 $\boxed{\text{halving } b \text{ would double } x \text{ value}}$

4

13. max  
 1-0  
 2-2  
 3-5  
 4-2  
 $y = -2x^2 - 3x + 4$   
 $\boxed{\text{max}(-1.5)}$

3

18. avg rate of  $\Delta$   
 $\frac{30-10}{900-100} = \frac{20}{800} = 0.025$

1

14.  $2^2 + 2^2 = 2^2$   
 $20 + 21 = 29$   
 $400 + 441 = 841$   
 $841 = 841$

4

19. dropped at constant 9% rate / yr

0	25000
1	22750
2	20612.5
3	18561.875
4	16610.26875
5	14752.7390625

rate =  $\frac{4}{5}$  or .8  
 $\frac{20,000}{25,000}$

3

15.  $f(x) = 150 - 6x$   
 $x = \# \text{ necklaces}$   
 $f(x) = \text{dollars left}$

3

20.  $f(x) = 14x + 60$   
 $b = 60$   
 $m = 14$   
 } from graph

2



21.

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

$$(2x - 1)(2x + 3) = 0$$

$$2x - 1 = 0 \quad | \quad 2x + 3 = 0$$

$$x = \frac{1}{2} \quad | \quad x = -\frac{3}{2}$$

23.

$$r = 0.98468$$

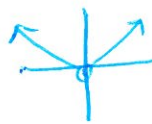
22.

$$5x^3 - 4x^2 + 2x + 3$$

Quad term  
coefficient = -4

24. abs val

$$|a| = \begin{cases} a, & a \geq 0 \\ -a, & a < 0 \end{cases}$$



**Part II**

*2ed*

25.

$$a(n) = (n+3)^{n-1}$$

5<sup>th</sup> term  $n=5$

$$a(5) = (5+3)^{5-1}$$

$$= 8^4$$

$$a(5) = 4096$$

26.

$$\frac{3}{6x} + \frac{1}{2} = \frac{8}{x} + \frac{4}{3}$$

LCD =  $6x$

$$3 + 3x = 48 + 8x$$

$$-45 = 5x$$

$$-9 = x$$

27.

$$(x^2+4)(2x^2+x-1)$$

	$2x^2$	$+x$	$-1$
$x^2$	$2x^4$	$x^3$	$-x^2$
$+4$	$8x^2$	$4x$	$-4$

$$2x^4 + x^3 + 7x^2 + 4x - 4$$

28.

$$y = x^2 - 16$$

$$y\text{-int } y = 0^2 - 16$$

$$y = -16$$

$$-16 \text{ or } (0, -16)$$

29.

Profit

$$P(x) = 45 + 22x$$

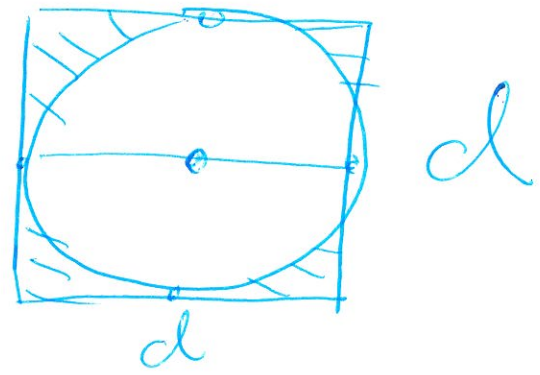
 $x = \# \text{ bowls}$

30.

Play area

area  $\square$  - area  $\bigcirc$

$$A(d) = d^2 - \pi \left(\frac{d}{2}\right)^2$$



31.

$$x^2 - 8x - 20 = 0$$

$$(x - 10)(x + 2) = 0$$

$x - 10 = 0$	$x + 2 = 0$
$+10 \quad +10$	$-2 \quad -2$

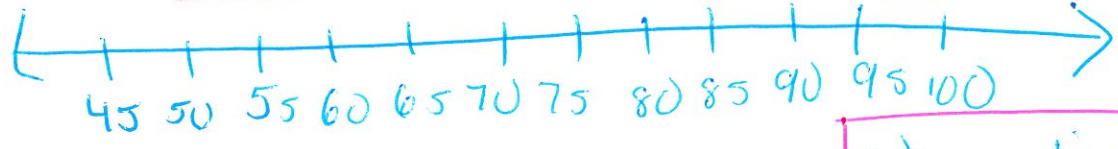
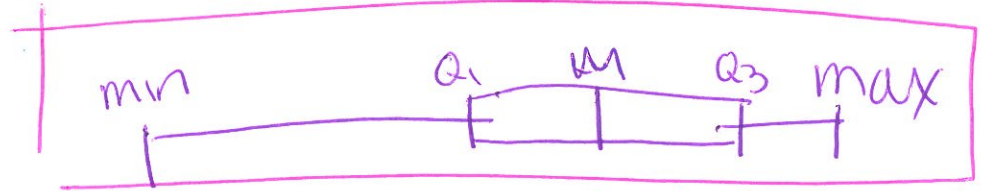
$x = 10$        $x = -2$

$$\{-2, 10\}$$

- ① given
- ② factor
- ③ set each factor = 0 and solve for x

32.

$\overset{\text{min}}{\downarrow}$  56,  $\overset{Q_1}{\downarrow}$  73, 76, 78, 82,  $\overset{M}{\downarrow}$  85, 88, 90,  $\overset{Q_3}{\downarrow}$  95, 99,  $\overset{\text{max}}{\downarrow}$  100



Quiz Scores

$$b) \text{median } 85$$



Part III

4ed

33.

$$y = a + b x$$

$$a) \quad y = 9.48 x + 31.52$$

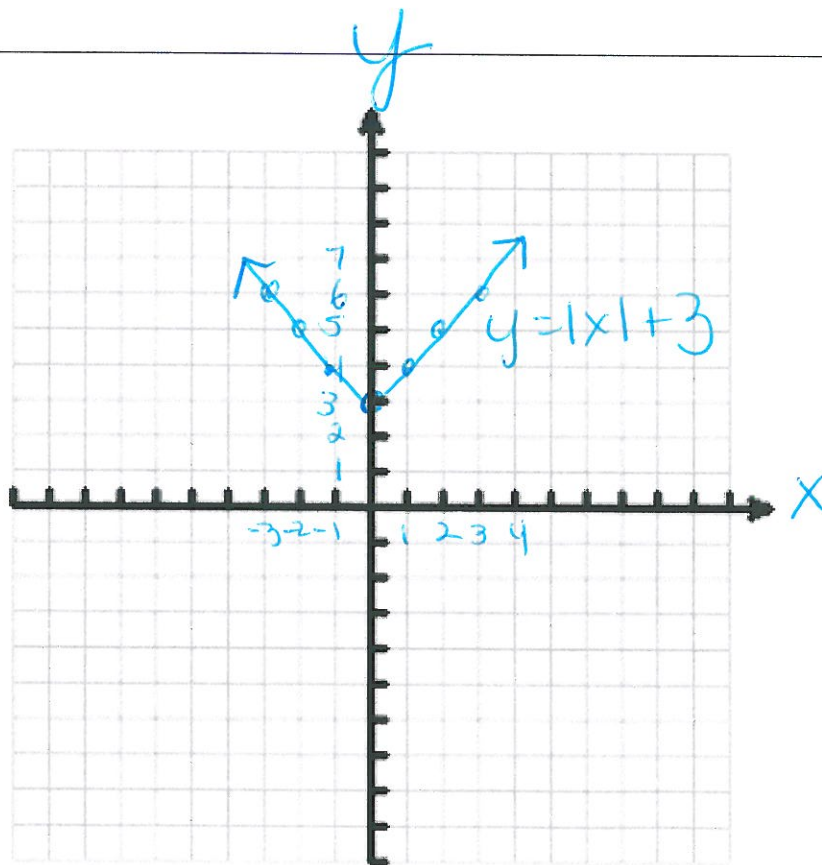
$x = \# \text{ hours worked}$

$y = \$ \text{ earned}$

$$b) \quad y = 9.48(25) + 31.52 = \$268.52$$

34.

$$y = |x| + 3$$

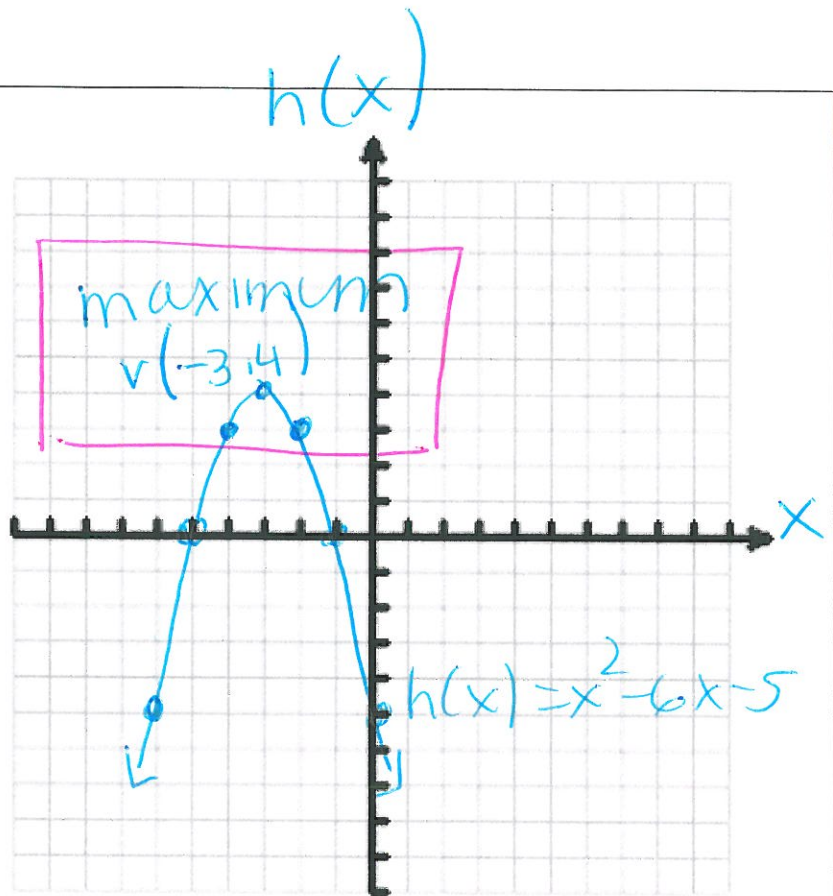


Part III

35.

$$h(x) = -x^2 - 6x - 5$$

x	h(x)
-6	-5
-5	2
-4	3
-3	4
-2	3
-1	0
0	-5



36.

$$a) c(d) = 1600 + .10d$$

$$b) c(4000) = 1600 + .10(4000)$$

$$= \$2000.00$$

$$c) 4000(.6) = \$2400$$

$$- 2000$$

$$\$400.00$$

Part IV

4

37.

$$y = \frac{1}{4} (2)^x$$

x	y
0	0.25
1	0.5
2	1
3	2
4	4
5	8

b) avg rate of change bet  $t=2$  and  $t=5$

$$\frac{8 - 1}{5 - 2} = \frac{7}{3}$$

