

Review for Calculus I

Key

★ SHOW ALL WORK TO GET TO ANSWERS

#1. a) 8

b) -7

c) undefined

d) undefined

e) 1

f) $1 + \ln(4)$

g) $f(-9) = 54$

$f(0) = 0$

#2. a) $4 + 4h + h^2$

b) $h^2 + 17h + 60$

c) e^{4+4h}

d) $19 + 5k$

e) $h^3 + 15h^2 + 75h$

#3. a) 9

b) 3

#4. $(-\infty, -1) \cup (-1, 0) \cup (0, \infty)$

#5. $[-8, \infty)$

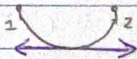
#6. $(0, \infty)$

#7. $|x-8| = \begin{cases} x-8 & \text{if } x > 8 \\ -(x-8) & \text{if } x \leq 8 \end{cases}$

#8. 0

#9. undefined

#10. 1

#11. 

#12.  (same line?)

#13. above the x-axis so $f(x) > 0$ (1, 5.3)

#14. At $x = -1, 1, 2, 5.3$

#15. below the x-axis so $f(x) < 0$

#16. $y = 4x + 4$

#17.
$$\frac{2x^3 + 30x + 45}{6x^3 + 9x^2}$$

#18.
$$\frac{3\sqrt{x} + x\sqrt{x} + 9x + 27}{x - 81}$$

#19.
$$\frac{32 + 4\sqrt{x} + 8x + x\sqrt{x}}{64 - x}$$

#20. $(x+2)(x-8)$

#21. $(x+5)(x-5)$

#22. $x = 0, x = -2/3$

#23. $x = -4, x = 3$

#24. $x = \pm\sqrt{2}$ (means $x = -\sqrt{2}, x = \sqrt{2}$)

#25. $x = \frac{6-5y}{7}$

#26. $7x^2 + 112x + 448$