

## Practice Assignment 2

Derivatives & ApplicationsAnswers

- (1)  $y = -11x + 18$  ; (2)  $y = -20x - 4$  ; (3)  $y = -9x + 20$  ; (4)  $y = -21x - 16$  ; (5)  $y = -19x - 43$
- (6)  $y = 14x - 9$  ; (7)  $k = 1, k = 2$  ; (8)  $k = -4, k = 2$  ; (9)  $k = 1$  ; (10)  $k = 0, k = 2$  ; (11)  $k = 1, k = 9$
- (12)  $k = -2, k = -1$  ; (13)  $\frac{109}{2} = 54.5$  ; (14)  $\frac{32}{3} \approx 10.7$  ; (15)  $-\frac{85}{3} \approx -28.3$
- (16)  $\frac{173}{2} = 86.5$  ; (17)  $-\frac{95}{8} = -11.875$  ; (18) 3 ; (19) 11031 (Don't forget to interpret)
- (20) -14996 (Don't forget to interpret) ; (21) 5955 (Don't forget to interpret)
- (22) 37030 (Don't forget to interpret) ; (23) -340 (Don't forget to interpret)
- (24) 236 (Don't forget to interpret) ; (25) -88 ; (26) 22 ; (27) 113 ; (28) 5 ; (29)  $\frac{29}{2}$  ; (30) 526
- (31)  $y = 6x + 8$  ; (32)  $y = 2x - 9$  ; (33)  $y = 2x + 1$  ; (34)  $y = -\frac{2}{9}x + 4$  ; (35)  $y = \frac{3}{10}x + \frac{7}{10}$
- (36)  $\frac{9}{8}$  ; (37)  $\frac{64}{3}$  ; (38)  $\frac{4}{3}$  ; (39) -96 ; (40)  $\frac{9}{5}$
- (41)  $y = -4x + 5$  ; (42)  $y = -4x - 7$  ; (43)  $y = 13x + 10$
- (44)  $y = 5x - 10$  ; (45)  $y = 27x - 49$  ; (46)  $y = -33x - 39$  ; (47)  $k = -1, k = 2$  ; (48)  $k = 1, k = 5$
- (49)  $k = -1, k = 8$  ; (50)  $k = -4$  ; (51)  $k = -2, k = 4$  ; (52)  $k = -2, k = -\frac{3}{2}$  ; (53) 12
- (54) 14 ; (55)  $-\frac{22}{3} \approx -7.3$  ; (56) 42 ; (57)  $\frac{73}{4} = 18.25$  ; (58) 131 ; (59) 19212 (Don't forget to interpret)
- (60) -84 (Don't forget to interpret) ; (61) 13071 (Don't forget to interpret)
- (62) 5040 (Don't forget to interpret) ; (63) -1830 (Don't forget to interpret)
- (64) 208 (Don't forget to interpret) ; (65) 14 ; (66) 117 ; (67) 454 ; (68) 9 ; (69) -844 ; (70) 0
- (71)  $y = -12x + 75$  ; (72)  $y = 13x - 18$  ; (73)  $y = x + 1$  ; (74)  $y = \frac{9}{2}x + 4$  ; (75)  $y = -\frac{9}{2}x + 37$
- (76)  $-\frac{4}{27}$  ; (77)  $\frac{24}{5}$  ; (78)  $-\frac{4}{9}$  ; (79) 85 ; (80) 2 ; (81)  $c = -2, c = 6$  ; (82)  $k = \pm 2$
- (83) 3.96 (Don't forget to interpret) ; (84) 3.50 (Don't forget to interpret) ; (85)  $y = 19x - 4$  ; (86)  $y = x + 21$
- (87 a)  $-1 < x < 1$  or  $x > 3$  ; (87 b)  $x = 1$  ; (87 c)  $x < -1$  or  $-1 < x < 3$  or  $x > 3$
- (87 d)  $f(-1) = \text{undefined}$  ;  $f(0) = 1$  ;  $f(1) = -2$  ;  $f(3) = 4$
- (88 a)  $-2 < x < 0$  or  $x > 1$  ; (88 b)  $x = 1$  ; (88 c)  $x < -2$  or  $x > -2$

(88 d)  $f(-2) = 3$ ;  $f(0) = 1$ ;  $f(1) = 0$ ;  $f(-1) = 0$

(89 a)  $x < -3$  or  $-3 < x < -1$  or  $x > 2$ ; (89 b)  $x = -3$ ; (89 c)  $x < -1$  or  $-1 < x < 2$  or  $x > 2$

(89 d)  $f(-3) = 1$ ;  $f(-2) = 0$ ;  $f(-1) = 3$ ;  $f(2) = \text{undefined}$

(90)  $y = -3x + 18$ ; (91)  $y = 3x - 2$ ; (92)  $-\frac{1}{4}$ ; (93)  $\frac{3}{2}$ ; (94)  $-13$ ; (95)  $-\frac{7}{2}$ ; (96)  $x = -5$  and  $x = 1$

(97)  $(3, -221)$ ;  $(-8, 1066)$ ; (98)  $-14$ ; (99)  $(0, 0)$ ;  $(-8, -16)$ ; (100)  $(1, \frac{1}{4})$