13) Linear Equations

Lines from point & slope

13.1 $y = (3/4)x - 2$

13.2 $y = -2x + 23$

13.3 $y = -(5/2)x + 9$

13.4 $y = (4/7)x - 31/14$

Lines from two points

13.5 $y = -2$

13.6 $y = (3/4)x + 9/2$

13.7 $y = -x + 10$

13.8 $x = 1$

Standard form

13.9 slope 3, y-int –8

13.10 slope $1/2$, y-int –2

13.11 slope $-1/2$, y-int 6

13.12 slope 0, y-int –3

Linear models

13.13 $C(x) = 9x + 4$

13.14 $P(t) = 925t + 21850$

13.15 $S(p) = -14p + 160$

13.16 $y = 0.1125x + 3.1625$

Determine the equation of the line with slope $3/4$ containing the point (0, –2).

13.1

Determine the equation of the line with slope –2 containing the point (6, 11).

13.2

Determine the equation of the line with slope $-3/4$ containing the point (4, –1).

13.3

Determine the equation of the line with slope $\frac{4}{7}$ containing the point $(\frac{2}{3}, -\frac{11}{6})$. 13.4	Determine the equation of the line containing the points (2, –2) and (7, –2). 13.5
Determine the equation of the line containing the points (–2, 3) and (2, 6). 13.6	Determine the equation of the line containing the points (4,6) and (1,9). 13.7

Determine the equation of the line containing the points (1, 7) and (1, 4). 13.8	Determine the slope and y-intercept for the line: $y + 2 = 3(x - 2)$ 13.9
Determine the slope and y-intercept for the line: $2x - 4y = 8$ 13.9	Determine the slope and y-intercept for the line: $y = \frac{12 - x}{2}$ 13.11

Determine the slope and y-intercept for the line: $2 + x - y = 8 + x + y$ 13.12	A gaming company sells plastic figurines for \$9 each, and charges \$4 to ship an order of any size. Model the cost $C(x)$ of purchasing x figurines as a linear function. 13.13
The cost of a non-luxury new car in the year 2000 (call it year zero) averaged \$21,850. In 2024 (call it year 24), the average price for a new car was \$44,050. Model the average price $P(t)$ of a new car in year t as a linear function. 13.14	When Clarissa's Cakes set their price for cakes at \$7, they sold 62 cakes that week. The next week, they reduced the price to \$5 and sold 90 cakes. Model the projected sales $S(p)$ of cakes with a price of p dollars as a linear function. 13.15

During the 3rd modern Olympiad in St. Louis, the winning pole vault was 3.5 meters. During the 23rd modern Olympiad in Los Angeles, the winning pole vault was 5.75 meters. Model the height of the winning vault as a linear function. 13.16	