

Homework Help

1.7: Pg. 160: QR: 1-10, EX 1-4, 7, 8, 12, 21, 23, 25, 31, 39, 43-47

EX 7. original salary = x $x + 0.045x = \boxed{1.045x}$

8. original income = x $x - 0.03x = \boxed{0.97x}$

12. Let C be the total cost and n be the number of items produced. $C = (1.09)28,000 + 19.85n$

21. $x + 4x = 620$ $4x = 496$ The two numbers are 124 and 496
 $x = 124$

23. $1.035x = 36,432$

$x = \boxed{\$35,200}$

25. $52t = 182$

$t = \boxed{3.5 \text{ hours}}$

31. a) $0.10x + 0.45(100 - x) = 0.25(100)$

b) Graph $y_1 = .10x + .45(100 - x)$ and $y_2 = .25(100) = 25$. Find the intersection.
use $x \approx 57.14$ gallons of the 10% solution and about 42.86 gallons of the 45% solution.

39. one rotation: $C = 2\pi r = 2\pi(16) = 32\pi$ inches

Bicycle's speed in feet per second: $\left(\frac{32\pi \text{ inches}}{1 \text{ rotation}}\right)\left(\frac{2 \text{ rot}}{1 \text{ sec}}\right) = 64\pi$ in/sec

Unit conversion:

$\left(\frac{64\pi \text{ in}}{1 \text{ sec}}\right)\left(\frac{1 \text{ ft}}{12 \text{ in}}\right)\left(\frac{1 \text{ mile}}{5280 \text{ ft}}\right)\left(\frac{60 \text{ sec}}{1 \text{ min}}\right)\left(\frac{60 \text{ min}}{1 \text{ hour}}\right) \approx \boxed{11.42 \frac{\text{miles}}{\text{hour}}}$

43-47.

(A) Linear regression \rightarrow The points will resemble a straight line.

(B) Quadratic regression \rightarrow The points will resemble a parabola.

(C) Cubic regression \rightarrow The points will resemble an "S" shape.

(D) Exponential regression \rightarrow The points will resemble an exponential function.

(E) Sinosoidal regression \rightarrow The points will resemble a sinusoid (sine, cosine)