College Algebra - Even Answers

Problem Set 102

2] $\frac{7}{13}$ 4] B = 18 mph; W = 9 mph 6] $A_1 = 60°$; $A_2 = 20°$ 8] $8a^6 - 12a^4b^3 + 6a^2b^6 - b^9$

10] 1 12] DEVELOP 14] a) 1.90 b) 3.36 16] 3 18] 1.70; 11.15

20] PROOF 22] A = 101.54°; area = 63.23 cm^2 24] a) $y = 6 + 8\csc x$ b) $y = \cot\theta$

26] $\frac{\pi}{3}, \frac{5\pi}{3}$ 28] 64.95 ft^2 30] 1

Problem Set 103

2] $\frac{1}{16}$ 4] 20 atm 6] 54 ml 8] 1.80 x 10^{-5} 10] 3.16 x 10^{-7} mole/liter

12] $81a^8 - 108a^6b^3 + 54a^4b^6 - 12a^2b^9 + b^{12}$ 14] DEVELOP 16] a) 1.92 b) 1.24

18] $\frac{3}{4}$ 20] 4 22] PROOF 24] Area = 0.0017 m^2; a = 11.36 cm 26] $\frac{\sqrt{6}+\sqrt{2}}{4}$

28] 0° 30] x

Problem Set 104

2] $\frac{4200}{140+s+f}$ gal 4] 45 6] a) DEVELOP b) 22 8] 89.13 10] 3.16 x 10^{-9} m/l

12] $x^6 - 6x^4y + 12x^2y^2 - 8y^3$ 14] 0 16] DEVELOP 18] a) 2.12 b) 1.06

20] 2 22] PROOF 24] GRAPH 26] $\frac{\sqrt{3}}{2} + \frac{1}{2}i; -\frac{\sqrt{3}}{2} + \frac{1}{2}i; -i$ 28] 0

30] $\left(x + \frac{1}{2} - \frac{\sqrt{11}}{2}i\right)\left(x + \frac{1}{2} + \frac{\sqrt{11}}{2}i\right)$

Problem Set 106

2] 40,320 4] \$5600 6] $\frac{(x-5)^2}{16}+\frac{(y+1)^2}{1}=1$; center:$(5,-1)$; major:8; minor:2; GRAPH

8] $\frac{(x+1)^2}{1}-\frac{(y-2)^2}{1}=1$; center:$(-1,2)$; vertices:$(-2,2)(0,2)$; asymptotes: $y=x+3, y=-x+1$; GRAPH

10] $(x+2)^2+(y-3)^2=9$; $x^2+y^2+4x-6y+4=0$ 12] DEVELOP 14] $\log\left(\frac{x^8 z^{\frac{3}{2}}}{y^3}\right)$

16] $4860x^4y^2$ 18] DEVELOP 20] $\frac{25}{9}$ 22] $1, e^{\frac{4}{9}}$ 24] PROOF 26] GRAPH

28] $1.64cis36.58^\circ; 1.64cis126.58^\circ; 1.64cis216.58^\circ; 1.64cis306.58^\circ$ 30] $\frac{t}{t+1}$

Problem Set 107

2] $\frac{2x}{x-2}$ days 4] 0.4 6] 6

8] $\frac{(x+3)^2}{4}+\frac{(y-1)^2}{9}=1$; center:$(-3,1)$; major:6; minor:4; GRAPH

10] $(x-1)^2+(y+3)^2=1$; $x^2+y^2-2x+6y+9=0$ 12] $x=-2; y=2; z=-1$ 14] 3.16×10^{-9}

16] $280x^3$ 18] a) DEVELOP b) $\frac{\sqrt{6}}{2}$ 20] $\frac{4}{3}$ 22] 4 24] PROOF

26] GRAPH 28] $\frac{\sqrt{6}+\sqrt{2}}{4}$ 30] $-\frac{\sqrt{3}}{2}-\frac{1}{2}i; \frac{\sqrt{3}}{2}-\frac{1}{2}i; i$

Problem Set 108

2] 8.11% 4] J = 29 yr; K = 17 yr

6] $A+B=\begin{bmatrix}-1 & 1 & 1\\ 3 & 4 & 3\\ 5 & 5 & 0\end{bmatrix}; A-B=\begin{bmatrix}3 & -1 & 1\\ -3 & 0 & 3\\ -3 & -3 & 0\end{bmatrix}; 2A=\begin{bmatrix}2 & 0 & 2\\ 0 & 4 & 6\\ 2 & 2 & 0\end{bmatrix}$ 8] AB does not exist; $BA=\begin{bmatrix}2\\ 8\end{bmatrix}$

10] $\frac{(x+2)^2}{3}+\frac{(y-3)^2}{5}=1$; center:$(-2,3)$; major:$2\sqrt{5}$; minor:$2\sqrt{3}$; GRAPH 12] -144

14] $5+\frac{7}{3}(n-1)$ 16] $2+\frac{5}{3}\log_6 x+\frac{4}{3}\log_6 y+3\log_6 z$ 18] a) DEVELOP b) $\frac{-2+\sqrt{3}}{4}$

20] $\frac{\ln 50}{\ln 7}$ 22] 0.52 24] PROOF 26] GRAPH 28] 0°, 180° 30] GRAPH