TEST 17, FORM A

1. 200
2. $480 \frac{\text{N}}{\text{m}^2}$
3. 300 pounds 24%; 600 pounds 12%
4. $2\sqrt{10}\angle 342°$
5. $19.51R + 25.30U$
6. (10, 5)
7. $\frac{1}{3} \pm \frac{\sqrt{11}}{3}i$
8. $\frac{9}{11}$
9. 146,880 in.^{2}
10. $C = 0.13S + 6$
11. $\frac{af - bdf - be}{e + df}$
12. $2 - \sqrt{10} - 6i$
13. $29 - 29i$
14. $a^{3/4}$
15. $2^{7/4}$
16. $\frac{7 - x}{x - 3}$
17. $R_B = 240$; $R_F = 40$; $T_B = 2$; $T_F = 4$
18. $\frac{200(100)(100)(100)(60)}{(2.54)(2.54)(2.54)} \frac{\text{in.}^3}{\text{min}}$
19. $\frac{3am + 2a^2 + 5m^2}{m(3m + 2a)}$
20. $p = \frac{5}{2}$; $q = \frac{5\sqrt{3}}{2}$

TEST 18, FORM A

1. 3×10^{11} K
2. 7200 ml 80%; 4800 ml 40%
3. $-8, -7, -6$
4. $2 - \sqrt{3}$
5. $-\frac{178\sqrt{35}}{35}$
6. $a^{11/15}y^{28/15}$
7. $\frac{x - 10}{(x + 3)(x - 3)}$
8. $0R - 9.90U$
9. $\sqrt{13}\angle 326.31°$
10. $R_C = 40$; $R_M = 80$; $T_C = 9$; $T_M = 6$
11. $\frac{bx^2 + 2x + 3b^2}{bx + 2}$
12. $-9 - 18i$
13. (10, 20)
14. $\frac{3}{4} \pm \frac{\sqrt{47}}{4}i$
15. $-\frac{77}{25}$
16. $7(3)(3)(3)(60) \frac{\text{ft}^3}{\text{min}}$
17. $\frac{bch - aehy + 3bef}{ahy - 3bf}$
18. $y = -\frac{3}{4}x + \frac{3}{4}$
19. (a) 3.83×10^{14} (b) 3.46
20. $m\widehat{XZ} = 125°$; $m\widehat{YZ} = 125°$; $32\sqrt{21}$ units^2

TEST 19, FORM A

1. 180 K
2. $R_C = 15$ mph; $R_K = 5$ mph; $T_C = 6$ hr; $T_K = 8$ hr
3. $N_B = 14$; $N_R = 12$
4. $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
5. $-\frac{1}{2} \pm \frac{\sqrt{5}}{2}i$
6. (a) 45° (b) 50°
7. $\frac{pm_2}{xkm_1m_2 + pm_1}$
8. $\frac{3x^2 - 3x - 5}{(x - 2)(x + 5)}$
9. $4\sqrt{3} - 3\sqrt{6} - 6\sqrt{2} + 8$
10. $-3^{9/4}$
11. $xa^{7/4}y^{5/2}$
12. 225
13. $\frac{xc^2 - xc - 2}{xc - x}$
14. $-10 - 10i$
15. $y = -\frac{4}{5}x + \frac{7}{5}$
16. $C = 0.4I - 4$
17. (a) $3\sqrt{2}\angle 135°$ (b) $1.5R - 2.6U$
18. $\frac{1}{3} \pm \frac{\sqrt{11}}{3}i$
19. $\frac{43}{2}$
20. $\frac{2\sqrt{74}}{5}$

TEST 20, FORM A

1. $R_O = 70$ mph; $R_B = 35$ mph; $T_O = 5$ hr; $T_B = 10$ hr
2. 1680 pounds 10%; 720 pounds 40%
3. $N_S = -9$; $N_L = -4$
4. (12, 5)
5. (6, 3, 2)
6. 16
7. 20
8. $1.14R + 19.35U = 19.38\angle 86.63°$
9. (a) 1.06×10^{12} (b) 12.96
10. $\frac{5\sqrt{5}}{2}$
11. $\frac{axy - cmy}{cmx}$
12. $1, -\frac{4}{3}$
13. 23.33 cm^2
14. $\frac{2x^2 + 5x - 5}{(x - 7)(x + 2)}$
15. $-1 - \sqrt{5}$
16. $-\frac{101\sqrt{66}}{33}$
17. $34 + 34\sqrt{10}$
18. $\frac{2a^2c^2 + 2c^3 + c^2}{a^2 + c}$
19. $10 + 4i$
20. -3

TEST 21, FORM A

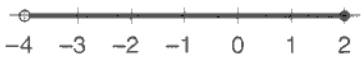
1. 80 kg
2. $R_H = 80$ mph; $R_A = 160$ mph; $T_H = 4$ hr; $T_A = 2$ hr
3. $N_S = 15$; $N_L = 24$
4. $\frac{120(1000)}{(2.54)(2.54)(2.54)(12)(12)(12)}$ ft^3
5. 144
6. -3
7. (2, 5, 1)
8. $\left(-21, \frac{95}{2}\right)$
9. $3\sqrt{105}$
10. $y = -\frac{3}{7}x - \frac{26}{7}$
11. $-9.56R + 9.50U$
12. $9.43\angle 212°$
13. 314 $in.^3$
14. (a) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (b) $\frac{3}{2} \pm \frac{\sqrt{11}}{2}i$
15. $\frac{-2x^2 - 5x + 1}{(x - 4)(x + 4)}$
16. $\frac{11\sqrt{6}}{2}$
17. $\frac{-3 - \sqrt{15} - 3\sqrt{3} - 3\sqrt{5}}{2}$
18. $\frac{az - acmy}{cm}$
19. $\frac{axz + a}{cxz + c + mz}$
20. $-\frac{1}{2} + \frac{1}{2}i$

TEST 22, FORM A

1. $R_{BO} = 60$ mph; $T_{BO} = 9$ hr; $R_{BU} = 45$ mph; $T_{BU} = 3$ hr
2. 6852
3. 10
4. $a^{7x/2}c^{5mx/3}$
5. x^{5a-6}
6. $\frac{abc + ax}{b^2c + bx + c}$
7. $\frac{5a - 4}{a - c}$
8. $(-2, 1, -3)$
9. $-4.89R + 11.59U = 12.58\angle 112.88°$
10. $-\frac{21}{10} + \frac{13}{10}i$
11. $-3 - i$
12. $-\frac{15\sqrt{6}}{2}$
13. $\frac{35 + 13\sqrt{5}}{38}$
14. $\frac{bx + 3b}{ac + bcx + bm}$
15. (4, 3) and (−3, −4)
16. 

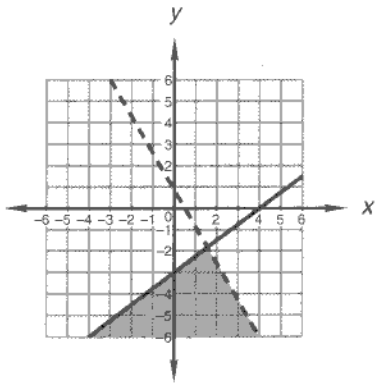
17. $\frac{3(5280)(5280)}{60}$ $\frac{ft^2}{min}$
18. $\frac{1}{3} \pm \frac{\sqrt{10}}{3}$
19. $-\frac{1}{2} \pm \frac{\sqrt{5}}{2}i$
20. $\frac{mc}{a}$

TEST 23, FORM A

1. $D_R = 60$ miles; $D_W = 10$ miles
2. 1.14 atm
3. $N_1 = 6$; $N_2 = 13$
4. 

5. $B = 20$; $T_D = 1$
6. (2, 1, 3)
7. 36
8. (a) 2 (b) 4
9. (a) $6.60R - 5.43U$ (b) $7.62\angle 293.20°$
10. $5\sqrt{5}$
11. $\dfrac{38(1000)(1000)(100)(100)}{(2.54)(2.54)(12)(12)(5280)(5280)}$ mi^2
12. $-\dfrac{3}{4} \pm \dfrac{\sqrt{41}}{4}$
13. $\dfrac{ckmp}{ap - cpy - cm}$
14. $y = \dfrac{4}{3}x + 9$
15. $a^{4x+y}c^{x/2}$
16. $\dfrac{m^2 + m}{m + 1 - m^2}$
17. $-\dfrac{23}{29} - \dfrac{14}{29}i$
18. $-8 - 7i$
19. $\dfrac{25 + 9\sqrt{5}}{22}$
20. $2^{7/12}$

TEST 24, FORM A

1. 60 K
2. 288
3. 25 mph
4. 18
5. Two different real numbers
6. (a) 20 (b) $\dfrac{7}{3}$
7. (a) $\dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (b) $-\dfrac{1}{6} \pm \dfrac{\sqrt{23}}{6}i$
8. 64
9. $-7.04R + 2.52U = 7.48\angle 160.30°$
10. 

11. $\dfrac{a^2bc + a^2m - zmc}{mc}$
12. (2, −1, 4)
13. (2, −1) and (−1, −2)
14. 

15. $m^{-5x/12}n^{3-3a}$
16. $\dfrac{15}{13} - \dfrac{16}{13}i$
17. $-\dfrac{169\sqrt{35}}{14}$
18. $\dfrac{33 - 20\sqrt{3}}{2}$
19. $\dfrac{ax + ac}{bx + bc + x}$
20. $\dfrac{27(12)(12)(12)(2.54)(2.54)(2.54)(60)}{1000}$ $\dfrac{\text{liters}}{\text{hr}}$

TEST 25, FORM A

1. 144
2. $R_L = 30$ mph; $R_O = 24$ mph; $T_L = 20$ hr; $T_O = 10$ hr
3. 90 gallons 20%; 210 gallons 50%
4. (−1, −7) and $\left(\dfrac{7}{3}, 3\right)$
5. a, c
6.