

Test 30

- 1) C
- 2) C
- 3) B
- 4) A
- 5) D

A) $4X + 2Y + 3Z = 10$
 $\frac{B) 2X - 2Y + Z = -6}{6X + 4Z = 4}$
 $\frac{30X + 20Z = 20}{32X - 20Z = 104}$
 $\frac{62X}{62X} = 124 \rightarrow X = 2$

$\frac{6(2) + 4Z = 4}{12 + 4Z = 4}$
 $4Z = -8$
 $Z = -2$

B) $6X - 6Y + 3Z = -18$
 $\frac{C) 2X + 6Y - 8Z = 44}{8X - 5Z = 26}$

A) $4(2) + 2Y + 3(-2) = 10$
 $8 + 2Y - 6 = 10$
 $2Y = 8$
 $Y = 4$
- 6) D (See solution for #5)
- 7) C (See solution for #5)
- 8) A

A) $6X - 3Y + 12Z = 15$
 $\frac{B) X + 3Y - 2Z = 8}{7X + 10Z = 23}$
 $\frac{7X + 10Z = 23}{-20X - 10Z = -10}$
 $\frac{-13X}{-13X} = 13$
 $X = -1$

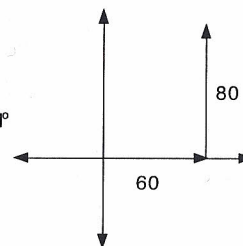
C) $3X + 3Y - Z = 9$
 $\frac{B) -X - 3Y + 2Z = -8}{2X + Z = 1}$
 $\frac{2(-1) + Z = 1}{-2 + Z = 1}$
 $Z = 3$

B) $(-1) + 3Y - 2(3) = 8$
 $-7 + 3Y = 8$
 $3Y = 15$
 $Y = 5$
- 9) D (See solution for #8)
- 10) B (See solution for #8)
- 11) D $X = \frac{3}{Y} \rightarrow XY = 3$
- 12) B First equation is a line and the second a circle. A line cannot touch a circle in more than two places.
- 13) B $(\sqrt[3]{27})^{-1} = 3^{-1} = \frac{1}{3}$
- 14) A $CS_2 = 12 + 32 + 32 = 76$
 $\frac{12}{76} = \frac{C}{1368} \rightarrow C = \frac{12 \cdot 1368}{76} = 216 \text{ g}$
- 15) C $2[(2+X) - (-3)]^2 =$
 $2(2+X+3)^2 =$
 $2(X+5)^2 =$
 $2(X^2 + 10X + 25) =$
 $2X^2 + 20X + 50$

Test 31

- 1) B
- 2) C
- 3) A
- 4) C: $\sqrt{60^2 + 80^2} = \sqrt{3,600 + 6,400} = \sqrt{10,000} = 100$

5) A: $\tan \theta = \frac{80}{60}; \theta = 53.1^\circ$



- 6) C
- 7) D: $H^2 = 50^2 + 70^2 = 7,400$
 $H = \sqrt{7,400} \approx 86$
- 8) B: $\tan \theta = \frac{70}{50} = 1.4$
 $\theta \approx 54.5^\circ$

9) C: $(+2) + (+3) = +5$ on the X axis
 $(+5) + (-1) = +4$ on the Y axis

10) D: $H^2 = 5^2 + 4^2 = 41$
 $H = \sqrt{41} \approx 6.4$
 $\tan \theta = \frac{4}{5} = .8$
 $\theta \approx 38.7^\circ$

11) C: $4i - 3i^2 = 4i + 3$

12) C

13) D: $\frac{16 \cdot \frac{1}{2} \cdot 3^{-2}}{2^{-2}} = \frac{2^2}{\frac{1}{16^2 \cdot 3^2}} = \frac{4}{4 \cdot 9} = \frac{1}{9}$

14) C: $i^{401} = i^{400} \cdot i = i$

15) C: $\frac{B^{\frac{1}{3}} B^4}{B^{-2}} = B^{\frac{13}{3}} B^2 = B^{\frac{19}{3}}$