The following were changed at the resolution center at the convention: 23 E

1. (B) 4w + 12 = 80; width = 17 and length = 23; A = 391

2. (D) 2x 4x 5x 4x =20 so x = 5; 11x = 55

M A 20 T H

3. (C) Air Force and Navy

4. (A) r2 = (r-18)2 + 242

r r2 = r2 -36r +324 + 576

r-18 36r = 900

r = 25

24

5. (C) 19 = 28 ; x = 10.4; shadow = 22 + 10.4 = 32.4

22 x+22

28 19

x 22

6. (C) x = one base angle: 2x = 4(180 - 2x); x = 72

7. (B) V = ; 20560

8. (D) 49π - 9π = 40π

9. (C) 5(921.6) = 4608

10. (A) (7-r) + (5-r) = 9

C r = 1.5

5-r

7-r 5-r

r

B 7-r r

A

11. (D) vertical angles: 5x - 4y = -8

supp angles: x = 9y - 182

substituting: 5(9y - 182) - 4y = -8; y = 22

vertical angles: 9r = 5y - 2

r = 12

12. (C) p→q

q→p

~q→~p

p→q

q→p

13. (E) II only

14. (C) diagonal of cube = = 6

radius of sphere =

Vsphere = = 108π

Vcube = 63 = 216

Vsphere outside cube = 108π - 216 = 108(π - 2)

15. (D) = =

16. (C) ; x = 6

y2  = 62 + ; y = 4

z 2 y z2 = 22 + ; z = 4

P = x + y + z = 12 + 4 = 4(3 + )

2 x

17. (B) SAcone = πr*l* = π(5)(13) = 65π

18. (B)

**a** xy x + y = 360 - 113 - 94 = 153

**b** a + b = 360 - 75 - 68 - 153 = 64

113° 94°

75°

68°

19. (C) ½ (90-x) + (180-x) = 165

x = 40, measure of angle

50, measure of complement

20. (B) =

21. (C) A

x+2**(6)** 2x+1**(9)** x2 - 4x = 0

x = 4

B E P = 9 + 3 + 15 + 2 + 6 = 35

x-2**(2)**  x-1**(3)**

C 19-x **(15)** D

22. (A) slopeRS = ; ⊥slope =;

; c =

23. (C) 6e2 = 54; e = 3

V = e3; V = 33 = 27cm3

24. (D) LA = 2πrh; 968 = 2h; h= 44

total length = 36(44) = 1584; 1580

25. (B) 1 A2 trapezoids = 2= 4

45° Arectangle = 1(3) = 3

1 1

Aequiangular octagon = 3 + 4 = 7

1

26. (B) B (sinB)2 + (cosS)2 = = 1

24 **26**

U 10 S

27. (A) (-3,-1) and 2x + 4y = 9

= = =

28. (A) Aright triangle == 96; Atrapezoid = = 75; Apentagon = 96 + 75

A 16 B

**5**

12 **20 10** 10

E **5**  C

10 10

D

29.(C) x + 4x = 180

x = 36, measure exterior angle

360 ÷ 36 = 10, number of sides

= 35, number of diagonals

30. (B) 25(22π) = 550π, total distance of front wheel

12π, circumference of one back wheel

= , number of revolutions of one back wheel