

Calculator Test 10
2010 - 2011

11. Convert 69 inches to cm
 \div by 100 to convert to meters
 Multiply by 1,000,000 to convert to micrometers
 Ans: 1.75×10^6

12. $\text{Faces} : 2 + n$ Vertices for octagonal prism is $2n$ or $(2)(8) = 16$
 $\text{Edges} : 3n$
 $\text{Vertices} : 2n$

13.
$$\left[(30\%)(92) \right] + \left[(70\%) \left(\frac{89 + 78 + 96 + 92 + 98}{5} \right) \right] = 91.0$$

24. $(17)(10.59) + (18)(5.72) + (2)(15.99) = \314.97

25. $d = s \sqrt{2}$
 $s = \frac{d}{\sqrt{2}}$
 $s = \frac{6\pi}{\sqrt{2}}$
 $s = 13.3$

26. $\text{hexahedron} = \text{cube} = 6 \text{ faces}$
 $SA = 6s^2$
 $= 6(433)^2$
 $= 1.12 \times 10^6$

35. $\frac{1.5 \text{ inches}}{125 \text{ miles}} = \frac{x \text{ inches}}{3144 \text{ miles}}$
 $125x = (1.5)(3144)$
 $x = \frac{(1.5)(3144)}{125}$
 $x = 37.7$

36. Midpoint = $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
 $= \left(\frac{2\pi + -e^3}{2}, \frac{-\sqrt{2} + \ln 123}{2} \right)$
 $= -6.90$

$$\frac{2\pi + -e^3}{2} = \frac{2\pi + -(2.718281\dots)^3}{2}$$

 $= -6.90$

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37.

$$P = \frac{3}{4}C + 2r$$
$$= \frac{3}{4}(2\pi r) + 2r$$
$$= \frac{3}{4}[2\pi(905)] + 2(905)$$
$$= 6070$$

38.

$$A = \frac{h(b_1 + b_2)}{2}$$
$$2A = h(b_1 + b_2)$$
$$\frac{2A}{h} = b_1 + b_2$$
$$\frac{2A}{h} - b_2 = b_1$$
$$b_1 = \frac{2(.00083325)}{.2222} - .005$$
$$b_1 = .00250$$

47.

$$1.0825x = \$1045.67$$
$$x = \$965.98$$

48.

$$2^{153} = 1.14 \times 10^{46}$$

49.

$$x = \sqrt{\pi^2 + \left(\frac{126}{7}\right)^2}$$
$$= 18.3$$

50.

$$\tan \theta = \frac{\text{Opposite}}{\text{Adjacent}}$$
$$\theta = \tan^{-1} \frac{\text{Opposite}}{\text{Adjacent}}$$
$$\theta = \tan^{-1} \frac{126}{\pi}$$
$$\theta = 80.1$$

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$$59. (250 \text{ liters})(78\%) = (x + 250)(40\%)$$

$$195 = .4x + (250)(.4)$$

$$195 = .4x + 100$$

$$.4x = 95$$

$$x = \frac{95}{.4}$$

$$x = 238$$

$$60. \quad 12x - 7y = 22$$

$$-7y = -12x + 22$$

$$y = \frac{12}{7}x - \frac{22}{7}$$

$$m = \frac{12}{7}$$

Slope of line perpendicular to this line =

opposite sign and its reciprocal = $-\frac{7}{12} = -.583$

$$61. \quad V = \left(\frac{\pi r^2 h}{3} \right) (.5)$$

$$= \left(\frac{\pi \left(\frac{67.8}{2} \right)^2 \left(\sqrt{91.4^2 - \left(\frac{67.8}{2} \right)^2} \right)}{3} \right) (.5)$$

$$= 51100$$

62.

$$71. (n - 2)(180) = (48)(180) = 8640$$

$$72. (x) + (x + 1) + (x + 2) = 1587$$

$$3x + 3 = 1587$$

$$3x = 1584$$

$$x = 528$$

largest = $(x + 2)$

$$= 528 + 2$$

$$= 530$$

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73.

SAS

$$A = \frac{1}{2} a b \sin c$$

$$= \frac{1}{2} (459)(310.5) \sin 125^\circ$$

$$= 58400$$

74.

$$A = h^2 \tan 30^\circ$$

$$h^2 \tan 30^\circ = A$$

$$h^2 = \frac{A}{\tan 30^\circ}$$

$$h = \sqrt{\frac{A}{\tan 30^\circ}}$$

$$h = 102$$