

Calculator Test 14
2010 - 2011

$$11. \frac{521.8 + 201.5 + 99.2 + 183.7 + 205.1 + 389.4 + 34.7 + x}{8} = 222.9$$
$$x = (8)(222.9) - 521.8 - 201.5 - 99.2 - 183.7 - 205.1 - 389.4 - 34.7$$

$$12. (35\%)(.875)\left(\frac{1}{2}\right)x = 4598$$
$$x = \frac{4598}{(35\%)(.875)\left(\frac{1}{2}\right)}$$
$$x = 30000$$

$$13. (x) + (x+1) + (x+2) = 4572$$
$$3x + 3 = 4572$$
$$3x = 4569$$
$$x = \frac{4569}{3}$$
$$x = 1523$$

$$x = (1523)(1524)(1525)$$
$$= 3.54 \times 10^9$$

$$24. 2.5 : 8 : 13 = \frac{2.5}{23.5} : \frac{8}{23.5} : \frac{13}{23.5}$$
$$\text{Smallest angle} = \frac{2.5}{23.5}(180)$$
$$= 19.1$$

$$25. (80\%)x = 384$$
$$.8x = 384$$
$$x = \frac{384}{.8}$$
$$x = 480$$

Calculator Test 14
2010 - 2011

26. $1 \text{ pint} = 16 \text{ oz}$
 $1 \text{ gal} = 8 \text{ pints} = (8)(16) = 128 \text{ oz}$

$$1 \text{ gal} = 3.79 \text{ liters}$$
$$\frac{1 \text{ gal}}{128 \text{ oz}} = \frac{40 \text{ liters}}{x \text{ oz}}$$
$$\frac{3.79 \text{ liters}}{128 \text{ oz}} = \frac{40 \text{ liters}}{x \text{ oz}}$$
$$(x \text{ oz})(3.79 \text{ liters}) = (128 \text{ oz})(40 \text{ liters})$$
$$x = \frac{(128)(40)}{3.79}$$
$$x = 1350$$

35. $260\%x = \$850$
 $x = \frac{850}{2.6}$
 $x = \$326.92$

36. 25298 Enter
 17922 \%CHG key
 $\text{Ans} = -29.2$

37. $s = \frac{P}{4}$

$$d = s\sqrt{2}$$
$$= \frac{P}{4}\sqrt{2}$$
$$= \frac{98350}{4}\sqrt{2}$$
$$= 34800$$

38. $C = 2\sqrt{\pi A}$
 $= 2\sqrt{\pi(.00008)}$
 $= .0317$

47. $(180 - x) = 3(90 - x) - 30$
 $180 - x = 270 - 3x - 30$
 $2x = 270 - 30 - 180$
 $2x = 60$
 $x = 30.0$

Calculator Test 14
2010 - 2011

48. $e^{2119} = \log e^{2119}$
 $= 2119 \log e$
 $= 920.270007152\dots$
 Write in answer blank, $\times 10^{920}$
 Subtract 920 from display
 Hit the 10^x key
 Write in answer blank, 1.86×10^{920}

49. $A = \frac{bh}{2}$
 $1234 = \frac{(9.5x)(5x)}{2}$
 $(2)(1234) = (9.5x)(5x)$
 $2468 = 47.5x^2$
 $x^2 = \frac{2468}{47.5}$
 $x = \sqrt{\frac{2468}{47.5}}$
 $x = 7.21$

50. $\sin \theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$
 $\theta = \sin^{-1} \frac{\text{Opposite}}{\text{Hypotenuse}}$
 $\theta = \sin^{-1} \frac{.182}{.775}$
 $\theta = 13.6$

59. $m_1 d_1 = m_2 d_2$
 $(130)(6) = (180)(x)$
 $x = \frac{(130)(6)}{180}$
 $x = 4.33$

60. $\left(\frac{2.39 \text{ gal}}{1 \text{ stroke}}\right) \left(\frac{51 \text{ strokes}}{1 \text{ min}}\right) \left(\frac{60 \text{ min}}{1 \text{ hr}}\right) = 7.31 \times 10^3 \text{ gal/hr}$
 Then enter, 7800 and hit the $(x \leftrightarrow y)$ key
 Ans is 1.07

Calculator Test 14
2010 - 2011

61. **SAS Theorem**

$$A = \frac{1}{2} ab \sin \theta$$

$$= (.5)(42.7)(77.7)(\sin 138^\circ)$$

$$= 1.11 \times 10^3$$

62.

$$d = s\sqrt{2}$$

$$s = \frac{d}{\sqrt{2}}$$

$$s = \frac{527}{\sqrt{2}}$$

$$SA = A_{\text{Large Circle}} - A_{\text{Square}} - A_{\text{Small Circle}}$$

$$= \pi r_{LC}^2 - s^2 - \pi r_{SC}^2$$

$$= \pi (527)^2 - \left(\frac{527}{\sqrt{2}}\right)^2 - \pi \left(\frac{527}{2}\right)^2$$

$$= 5.16 \times 10^5$$

71. Thickness of pipe = $\frac{(\text{O.D.} - \text{I.D.})}{2}$

$$= \frac{(6.62 - 6.06)}{2}$$

$$= .280$$

72. $\frac{52 \times 51 \times 50 \times 49 \times 48}{5 \times 4 \times 3 \times 2 \times 1} = 2,598,960$

Calculator Key Strokes:

52 Enter

5 (${}_n C_r$ key)

Example: A company employing 14 women and 10 men is forming a 6-person safety committee. How many different combinations of people are possible?

24 Enter

6 (${}_n C_r$ key)

${}_{24} C_6 = 134,596$

73. **Hero's Formula**

$$s = \frac{25 + 43 + 61}{2}$$

$$s = 64.5$$

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{64.5(64.5 - 25)(64.5 - 43)(64.5 - 61)}$$

$$= 438$$

Calculator Test 14
2010 - 2011

74. *Inner Diagonal* = ?

$$d = \sqrt{l^2 + w^2 + h^2}$$

$$d = \sqrt{(29)^2 + (21)^2 + (12)^2}$$

$$d = 37.8$$

For example, let's take a cube with an edge of 2.
Then the diagonal of the cube would be as follows:

Inner Diagonal = ?

$$d = \sqrt{l^2 + w^2 + h^2}$$

$$d = \sqrt{(2)^2 + (2)^2 + (2)^2}$$

$$d = \sqrt{4 + 4 + 4}$$

$$d = \sqrt{12}$$

$$d = \sqrt{(4)(3)}$$

$$d = (\sqrt{4})(\sqrt{3})$$

$$d = 2\sqrt{3}$$

$$d = e\sqrt{3}$$