

Calculator Test 8
2010 - 2011

11. $A = \pi r^2$
 $r = \sqrt{\frac{A}{\pi}}$
 $= \sqrt{\frac{2.86}{\pi}}$
 $= .954$

12. $\frac{5}{144} \times 100 = 3.47$

13. $(72)(5) - (9)(x) = 198$
 $360 - 9x = 198$
 $9x = 162$
 $x = 18$

24. $12x - 8 = 10x + 20$
 $2x = 28$
 $x = 14.0$

25. $\frac{299,792,458 \text{ m}}{1 \text{ sec}} \times \frac{1.09 \text{ yd}}{1 \text{ m}} \times \frac{1 \text{ mile}}{1760 \text{ yd}} \times \frac{3600 \text{ sec}}{1 \text{ hr}} = 6.71 \times 10^8$

26. $(\$2350.80 / \text{month})(36)$ save in storage A
 $(\$575.25 / \text{wk})(156)$ save in storage B
RCL A
RCL B
Subtract = \$5110.20

35. $220 + 5.5 = 226$

36. $3 : 5 : 9 = \frac{3}{17} : \frac{5}{17} : \frac{9}{17}$
Largest angle = $\left(\frac{9}{17}\right)(180) = 95.3$
Supplement = $180 - 95.3 = 84.7$

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37.

$$\begin{aligned} P &= d + \frac{C}{2} \\ &= d + \frac{2\pi r}{2} \\ &= d + \pi r \\ &= .887 + \pi \left(\frac{.887}{2} \right) \\ &= 2.28 \end{aligned}$$

38. short diagonal = d_1

$$\begin{aligned} A &= \frac{d_1 d_2}{2} \\ 2A &= d_1 d_2 \\ d_1 &= \frac{2A}{d_2} \\ d_1 &= \frac{2(4.1)}{3.9} \\ d_1 &= 2.10 \end{aligned}$$

47.

$$\begin{aligned} \text{Dimes} &= x \\ \text{Quarters} &= 67 - x \end{aligned}$$

$$\begin{aligned} (.1)(x) + (.25)(67 - x) &= 8.65 \\ (.1x) + [(.25)(67)] - [(.25x)] &= 8.65 \\ .1x - .25x + 16.8 &= 8.65 \\ -.15x &= 8.65 - 16.8 \\ x &= \frac{8.65 - 16.8}{-.15} \\ x &= 54 \end{aligned}$$

48. Use the °F-°C conversion key

$$-380^\circ F = -229^\circ C$$

49.

$$\begin{aligned} P &= 5.28 + 6\pi + \sqrt{(6\pi)^2 - (5.28)^2} \\ &= 42.2 \end{aligned}$$

50.

$$\begin{aligned} \cos \theta &= \frac{\text{Adjacent}}{\text{Hypotenuse}} \\ \theta &= \cos^{-1} \frac{\text{Adjacent}}{\text{Hypotenuse}} \\ \theta &= \cos^{-1} \frac{173}{221} \\ \theta &= 38.5 \end{aligned}$$

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59.

60. $D = rt$

$$\begin{aligned} t_1 + t_2 &= 3 \text{ hrs} \\ t_1 &= 3 - t_2 \end{aligned}$$

$$\begin{aligned} D_1 &= D_2 \\ r_1 t_1 &= r_2 t_2 \\ 2.8 t_1 &= 8.5 t_2 \\ 2.8(3 - t_2) &= 8.5 t_2 \\ (2.8)(3) - 2.8 t_2 &= 8.5 t_2 \\ 8.4 &= 11.3 t_2 \\ 11.3 t_2 &= 8.4 \\ t_2 &= .743 \end{aligned}$$

61. $A = \pi r^2$
 $r = \sqrt{\frac{A}{\pi}}$

$$\begin{aligned} V &= \frac{4}{3} \pi r^3 \\ &= \frac{4}{3} \pi \left(\sqrt{\frac{A}{\pi}} \right)^3 \\ &= \frac{4}{3} \pi \left(\sqrt{\frac{4578}{\pi}} \right)^3 \\ &= 2.33 \times 10^5 \end{aligned}$$

62. $s = \frac{a + b + c}{2}$
 $= \frac{17 + 39 + 52}{2}$
 $= 54$

$$\begin{aligned} A &= \sqrt{54(54 - 17)(54 - 39)(54 - 52)} \\ &= 245 \end{aligned}$$

71. diagonals in 33 sided polygon = $\frac{n(n-3)}{2}$
 $= \frac{33(33-3)}{2}$
 $= 495$

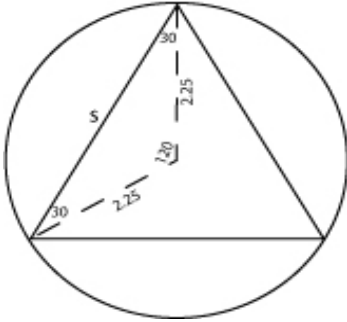
72. $Gallons = \frac{LWH}{231 \text{ cubic inches / gallon}}$
 $= \frac{(6 \text{ ft})(3 \text{ ft})(16 \text{ ft})}{231 \text{ cubic inches / gallon}}$
 $= \frac{(72 \text{ in})(36 \text{ in})(192 \text{ in})}{231 \text{ cubic inches / gallon}}$
 $= 2150$

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73.
$$r = \frac{s}{\sqrt{3}} \text{ (for an equilateral triangle)}$$

$$s = r\sqrt{3}$$

or



$$\frac{s}{\sin 120} = \frac{2.25}{\sin 30}$$

$$s(\sin 30) = 2.25(\sin 120)$$

$$s = \frac{2.25(\sin 120)}{(\sin 30)}$$

$$s = 3.90$$

74.
$$d = s\sqrt{3}$$

$$= .0008\sqrt{3}$$

$$= .00139$$

$$SA = A_{\text{Circle}} - A_{\text{Triangle}}$$

$$= \pi r^2 - \frac{s^2\sqrt{3}}{4}$$

$$= \pi(2.25)^2 - \frac{(3.90)^2\sqrt{3}}{4}$$

$$= 9.32$$