

Calculator Test 12
2010 - 2011

11. $Range = Highest - Lowest$
 $2,000,000 - -3954 = 2.00 \times 10^6$

12. $Mean = average$

$$\frac{-3954 + -455 + 270 + 850 + 900 + 1200 + 1540 + 2,000,000}{8} = 2.50 \times 10^5$$

13. $2^8 = 255 - 1$
 $= 255$

24. $(x) + (x + 1.5) = 20$
 $2x = 20 - 1.5$
 $x = \frac{20 - 1.5}{2}$
 $x = 9.25$

25. $\frac{19}{79} = .241$

26. $9(12x + 5) = (-x + 7)$
 $108x + 45 = -x + 7$
 $108x + x = 7 - 45$
 $109x = -38$
 $x = -.349$

35. $1 \text{ yd}^2 = 9 \text{ ft}^2$
 $Cost = \frac{(11)(23)}{9} (\$12.59)$
 $= \$353.92$

36. $C = 2\pi r$
 $r = \frac{C}{2\pi}$

$$V_{men} = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi \left(\frac{C}{2\pi} \right)^3$$

$$= \frac{4}{3} \pi \left(\frac{29.5}{2\pi} \right)^3$$

$$= 434$$

$$V_{women} = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi \left(\frac{C}{2\pi} \right)^3$$

$$= \frac{4}{3} \pi \left(\frac{28.5}{2\pi} \right)^3$$

$$= 391$$

Difference = $434 - 391$
 $= 42.6$

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37.

$$A = \pi r^2$$
$$r = \sqrt{\frac{A}{\pi}}$$
$$\text{diameter} = 2\sqrt{\frac{A}{\pi}}$$
$$= 2\sqrt{\frac{1227}{\pi}}$$
$$= 39.5$$

38.

$$A = (15)(25) - \left(11\frac{2}{3}\right)\left(3\frac{1}{3}\right)$$
$$= 336$$

47.

$$\frac{317.6 \text{ miles}}{1 \text{ hr}} \times \frac{5280 \text{ ft}}{1 \text{ mile}} \times \frac{1 \text{ hr}}{3600 \text{ sec}} \times 22 \text{ sec} = 10200$$

48.

$$(-8, -7, -6, \dots, 19, 20, 21) = 30$$

49.

$$A = \frac{bh}{2}$$
$$= \frac{(\sqrt{.345^2 - .09^2})(.09)}{2}$$
$$= .0150$$

50.

Put calculator in radian mode

$$\cos \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$$
$$\frac{\cos .297}{1} = \frac{2779}{x}$$
$$x = \frac{2779}{\cos .297}$$
$$x = 2910$$

Put calculator in degree mode

59.

$$205 \text{ mm} = 20.5 \text{ cm}$$

Use conversion key to convert cm to inches

$$\frac{143.5}{8.07} \times 100 = 1780\%$$

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60.

$$A = \pi r^2$$
$$r = \sqrt{\frac{A}{\pi}}$$
$$r = \sqrt{\frac{1386}{\pi}}$$
$$r = 21.0 \text{ (total radius)}$$

radius of pool = 21 - 10
= 11

diameter of pool = $2r = 2(11) = 22.0$

61.

$$V = LWH$$
$$V = Lxx$$
$$V = Lx^2$$
$$x^2 = \left(\frac{V}{L}\right)$$
$$x = \sqrt{\left(\frac{1475206}{205}\right)}$$
$$x = 84.8$$

62.

$$V = \frac{\frac{4}{3}\pi r^3}{8}$$
$$= \frac{\frac{4}{3}\pi(88)^3}{8}$$
$$= 3.57 \times 10^5$$

71. $231 \text{ in}^3 = 1 \text{ gallon}$

$$V = \pi r^2 h$$
$$V = \pi \left(\frac{5}{16} \text{ inch}\right)^2 (1200 \text{ inches})$$

To convert to gallons,

$$V = \frac{\pi \left(\frac{5}{16}\right)^2 (1200)}{231}$$
$$= 1.59$$

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72.

$$f(x) = 2x^2 - 8x + 5$$
$$g(x) = -10x^2 + 8x - 9$$
$$(f+g)(3) = [2x^2 - 8x + 5] + [-10x^2 + 8x - 9]$$
$$(f+g)(3) = [2(3)^2 - 8(3) + 5] + [-10(3)^2 + 8(3) - 9]$$
$$= [18 - 24 + 5] + [-90 + 24 - 9]$$
$$= -1 - 75$$
$$= -76.0$$

73. Put calculator in radian mode

$$V = Ah$$
$$= \left(\frac{nb^2}{4 \tan\left(\frac{\pi}{n}\right)} \right) (h)$$
$$= \left(\frac{(8)(37)^2}{4 \tan\left(\frac{\pi}{8}\right)} \right) (163.8)$$
$$= 1.08 \times 10^6$$

Put calculator in degree mode

74.

$$s = \frac{a+b+c}{2}$$
$$= \frac{25+17+9.5}{2}$$
$$= 25.8$$

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$
$$= \sqrt{25.8(25.8-25)(25.8-17)(25.8-9.5)}$$
$$= 52.4$$