

# Alg 2 CC

## Test 2

1)  $x^4 - 13x^2 + 36$   
 $(x^2 - 9)(x^2 - 4)$

$(x-3)(x+3)(x-2)(x+2)$

2)  $S = r\theta \rightarrow$  must be in radians

$S = 1 \left( \frac{2\pi}{3} \right)$   
 $\rightarrow$  unit circle

$S = \frac{2\pi}{3}$

3)  $S = -16(4)^2 + 90(4) + 6$

$S = 110$

4)  $30000 = \frac{d}{.035} \left( (1 + .035)^8 - 1 \right)$

$1050 = d (.316809037)$

$d = 3314.30$

5) choice 2

6)  $P(\text{odd}) + P(\text{Julie}) - P(\text{odd and Julie})$

$\frac{19}{38} + \frac{4}{38} - \frac{2}{38} = \frac{21}{38}$

7)  $x^2 - 4x + 4 = -13 + 4$

$\sqrt{(x-2)^2} = -9$

$x - 2 = \pm 3i$

$x = 2 \pm 3i$

8)  $(a^b)^{1/b} = a^{b/b} = a$

choice 1

9) choice 4

10) choice 3

11) can't be  $\pm 3$  not possible rational zeros

$2 \begin{array}{r|rrrr} 1 & 3 & -18 & -40 \\ \downarrow & 2 & 10 & -16 \\ \hline & 1 & 5 & -8 \end{array}$

$-2 \begin{array}{r|rrrr} 1 & 3 & -18 & -40 \\ \downarrow & -2 & -2 & 40 \\ \hline & 1 & 1 & -20 & 0 \checkmark \end{array}$

choice 3

12)  $\frac{8-14}{5-2} = \frac{-6}{3} = -2$

13) choice 2

because followed by the vertical stretch

14)  $(S \cup B) =$

Soccer + bball - both

$14 + 10 - 3 = 21$

15)  $10000 = P \left( 1 + \frac{.035}{36} \right)^{36}$

$10000 = P(1.110540876)$

$9004.62 = P$

16)  $3 \begin{array}{r|rrr} 1 & 5 & -20 \\ \downarrow & 3 & 24 \\ \hline & 1 & 8 & 4 \end{array}$

$x + 8 + \frac{4}{x-3}$

17) normalcdf(5.68, 10<sup>99</sup>, .4, 2.7)

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18)  $30 = \frac{2\pi}{b}$

$30b = 2\pi$

$b = \frac{2\pi}{30} = \frac{\pi}{15}$

$\frac{550}{30} + \frac{30}{58.0/2}$

$= 290$

$30 \quad 550$

$a = 260$

choice 3

19)  $P(A | < 50000) = P(A)$

$\frac{10957}{11604} \neq \frac{14529}{26270}$   
 94%  $\neq$  55%

Choice 3



34)  $A(x) = 2x + 12$   $A(5) = 2(5) + 12 = 22$   
 $B(x) = 1.5x + 16$   $B(5) = 1.5(5) + 16 = 23.50$   
 $2x + 12 = 1.5x + 16$  Carnival A is  
 $-1.5x - 12 - 1.5x - 12$  cheaper.  
 $2(.5x = 4)$   
 $x = 8$

35)  $x = 2$   $y = 0$

graph  
on key

$$\begin{array}{r|rrrr} 1 & 0 & -2 & -4 \\ \hline 1 & 2 & 2 & 0 \end{array}$$

$$f(x) = (x-2)(x^2 + 2x + 2)$$

$$x^2 + 2x + 1 = -2 + 1 \quad x = -1 \pm i$$

$$\sqrt{(x+1)^2} = \sqrt{-1}$$

$$x+1 = \pm i$$

36)  $\left(\frac{8}{17}\right)^2 + \left(\frac{15}{17}\right)^2 = 1$

$$\frac{64}{289} + \frac{225}{289} = 1$$

$$\frac{289}{289} = 1$$

$$1 \checkmark$$

37) a) Jessica made the most money during December.

b) From May to August her profits decreased.

c) No, because as  $x$  increases, her profits will continue to rise more rapidly.

graph  
on key