

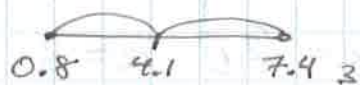
# CC Regents Review Book Test 5

①  $\$100.00 - \$106.20$   
 $A_T = 100 \left(1 + \frac{.06}{365}\right)^{365 \cdot 1}$   
 $= \$106.18$   
 Choice 4

②  $N_t = 100 \left(\frac{1}{2}\right)^{\frac{1}{5.2714}}$   
 $= 87.684$   
 $\therefore \approx 12\%$   
 Choice 2

③ - 6x6 possible outcomes  
 - 5 6 6 6  
 6 5  
 3 total > 10  
 $\therefore 36 - 3$   
 Choice 2

④ Cost =  $600 + .15c$   
 Revenue =  $1.5c$   
 $600 + .15c = 1.5c$   
 $600 = 1.35c$   
 $c = 444.\bar{4}$   
 Choice 3

⑤  $\sigma_x \approx 3.3$   
 $\bar{x} \approx 4.1$   
  
 $\frac{10}{15} = 66.\bar{6}\%$   
 Choice 2

⑥ Output =  $y$   
 Choice 3

⑦  $x^2 - 4x + 9 = 2x + 4$   
 $x^2 - 6x + 5 = 0$   
 $(x - 5)(x - 1) = 0$   
 $x = 1, 5$   
FIRST (1, 6)  
 Choice 3

⑧  $3(-8 - 11i) + 6 + 4i$   
 $= -24 - 33i + 6 + 4i$   
 $= -18 - 29i$   
 Choice 4

⑨  $f(x+3) \Rightarrow 3$  units to left  $\Rightarrow (-3-3, 5)$   
 Choice 4

⑩ Calculator  $\rightarrow$  Intersection  
 $2.7806907$   
 Choice 2

⑪  $A = \text{Pool}$   $B = \text{Hot tub}$   
 $P(A|B) = \frac{P(A \cap B)}{P(B)}$   
 $= \frac{.21}{.38} = .55$   
 Choice 3

⑫  $\therefore p(-2) = 0$   
 $\Rightarrow 2(-8) + 4c + 10 - 6 = 0$   
 $\Rightarrow -16 + 4c + 10 - 6 = 0$   
 $\Rightarrow -12 + 4c = 6$   
 $c = 3$

Answer key is wrong!

13.  $2x^2 + 5x - 3 = 7(x^2 + 2x - 3)$   
 $\Rightarrow 2x^2 + 5x - 3 = 7x^2 + 14x - 21$   
 $5x^2 + 9x - 18 = 0$   
 $(5x - 6)(x + 3) = 0$   
 $x = \frac{6}{5}, -3$   
 Choice 4

14. -Exp Key

	$L_1$	$L_2$
	0	15,600
	10	16,140
$-y_1 = 50000$	20	18,800
	30	21,780
	40	25,870
	50	29,160
	60	35,980

$x \approx 86.184$   
 Choice 1

15.  $x^2 - 5x + \left(\frac{5}{2}\right)^2 = -2 + \left(\frac{5}{2}\right)^2$   
 $\Rightarrow \left(x - \frac{5}{2}\right)^2 = \frac{17}{4}$   
 Choice 3

16. - The more trials  
 the closer to  
 theoretical probability.  
 Choice 2

17.  $(5, 63)$   $(11, 48)$   
 $\frac{48 - 63}{11 - 5} \approx -2.5$

Answer Key is wrong!

18.  $4C_2 \left(\frac{1}{2}\right)^2 \left(\frac{1}{2}\right)^2$   
 $= \frac{6 \cdot 4}{2} \cdot \frac{1}{4} \cdot \frac{1}{4}$   
 $= \frac{6}{16} = \frac{3}{8}$   
 Choice 1

+ or  
 tree  
 diagram.

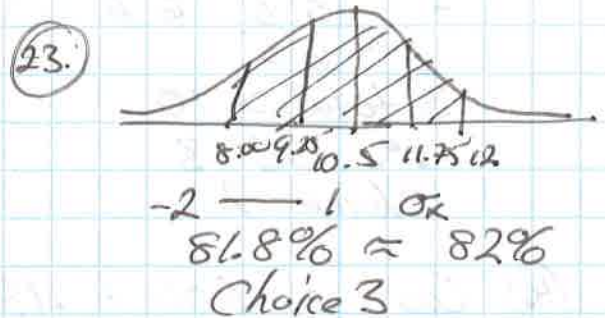
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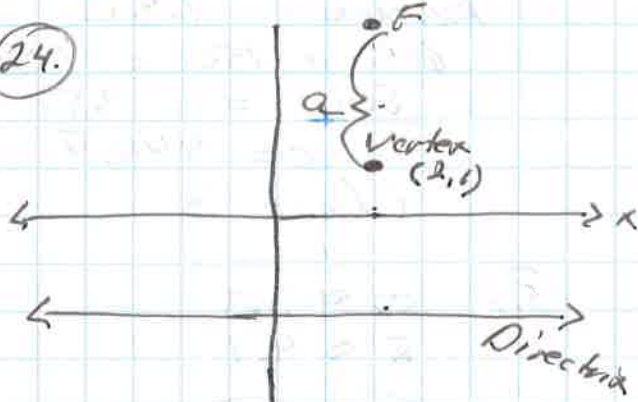
19. Calculator  
 Choice 3

20.  $A_6 = 16(.7)^6$   
 $= 1.88$   
 Choice 2

21. Zeros =  $-7, -2, 0, 5$   
 Factors =  $(x+7)(x+2)x(x-5)$   
 Choice 4

22.  $x^{3/5}$   
 Choice 3



24.   
 Vertex =  $(2, 1)$   $a = 3$   
 $y = \frac{1}{4a}(x-h)^2 + k$   
 $= \frac{1}{12}(x-2)^2 + 1$   
 Choice 1

$$\begin{aligned}
 25) \quad & i^4 + 2i^3 + 3i^2 + 4i \\
 & 1 - 2i - 3 + 4i \\
 & -2i + 2 \\
 & 2 - 2i
 \end{aligned}$$

26) Jennifer should make two groups; one that practices their shots before the game and the other group does not practice and she compares the game results.

$$27) \quad t(x) = 26000(1.02)^x$$

$$\begin{aligned}
 28) \quad & .625(.747) = .466875 \\
 & = 46.7\%
 \end{aligned}$$

$$29) \quad m(x) = 35 + 5x + 20(13.75)(1.04)^x$$

$$30) \quad \left( \frac{4x}{x-3} = 8 + \frac{12}{x-3} \right) \rightarrow x \neq 3$$

$$4x = 8(x-3) + 12$$

$$4x = 8x - 24 + 12$$

$$-8x - 8x$$

$$\underline{-4x = -12}$$

$$-4$$

~~$x = 3$~~  must reject

$$31) \quad \left( x = \frac{y-4}{y+5} \right)$$

$$x(y+5) = y-4$$

$$xy + 5x = y - 4$$

$$\underline{\quad +4 \quad \quad +4}$$

$$xy + 5x + 4 = y$$

$$\underline{-xy \quad \quad \quad -xy}$$

$$5x + 4 = y - xy$$

$$\underline{5x + 4 = y(1-x)}$$

$$1-x$$

$$n^{-1}(x) = \frac{5x+4}{1-x}$$

1,3,5,7,9,11 and 4,8,12

$$32) P(\text{odd}) \cdot P(\text{mult})$$

$$\frac{6}{12} \cdot \frac{3}{12} = \frac{18}{144} = \frac{1}{8}$$

This event is independent because Keith's spin does not change the probability of Julie's spin.

33) a)  $\frac{3.33 - 1.78}{2014 - 2005} = .172$  Average rate of change = .172 dollars/year

b)  $y = 1.836(1.066)^x$

$x_1 = 1$        $x_2 = 10$

$y_1 = 1.957176$      $y_2 = 3.478922257$

$\frac{y_2 - y_1}{x_2 - x_1} = .169$  dollars/year

c) The regression equation is a curve of best fit so the values used will not be the same.

34) on graph  
attach

35) a)  $a_n = 12.50 + .50(n-1)$

b)  $\frac{13 - 12.5}{12.50} = .04$      $a_n = 12.50(1.04)^{n-1}$

$a_5 = 12.50 + .50(5-1)$   
 $= 14.50$

$a_5 = 12.50(1.04)^{5-1}$   
 $= 14.62$

Geometric best models his actual hourly rate.

36)  $x^2 + 6x = -10$

$x^2 + 6x + 9 = -10 + 9$      $x^2 + 6x + 10 = 0$

$\sqrt{(x+3)^2} = \sqrt{-1}$

$x+3 = \pm i$

$\frac{-3}{-3} \quad \frac{-3}{-3}$

$x = -3 \pm i$

$a=1$      $x = \frac{-6 \pm \sqrt{(6)^2 - 4(1)(10)}}{2(1)}$

$b=6$

$c=10$

$x = -3 \pm \frac{\sqrt{4}}{2} \rightsquigarrow \frac{2i}{2}$

The quadratic formula  $x = -3 \pm i$  is derived by completing the square.