

Name Key

August 2018 Regents

Review # 12
Due: Wed. 6/12/19

Work must be shown for each question in order to receive credit.

17. To go from • to * the graph moves down (y-direction)
∴ choice 4
18. $P(\text{sophomore} | \text{Alg II}) = \frac{85}{210+85} = \frac{85}{295}$

4 2

19. $2 \ln(x) - 1 = \ln(x+6)$
 y_1 y_2
 Graph
 2nd - Trace - 5: Intersect
 $x = 5.62$

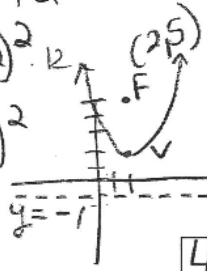
3 1

20. Period = $\frac{2\pi}{\omega}$ 1) $[-4, 4] \rightarrow 3$ max
 $8 = \frac{2\pi}{\omega}$ $[7, 1]$
 $\frac{8\omega}{8} = \frac{2\pi}{8}$ 2) $[-4, 4] \rightarrow 5$
 $\omega = \frac{\pi}{4}$ eliminates choices
 3+4

21. $0 = m^3 - 2m^2 + 4m - 8$ OR STORE
 $0 = m^2(m-2) + 4(m-2)$
 $0 = (m-2)(m^2+4)$
 $m=2 \mid m^2 = -4$
 $m = \pm 2i$

4 2

22. Period = $\frac{2\pi}{\omega}$
 $= \frac{2\pi}{\pi} \cdot 45$
 $= 90$ 1 cycle (all the way around)
 ∴ Halfway = 45

23. $y = \frac{1}{12}(x-2)^2 + 2$
 $12(y-2) = \frac{1}{12}(x-2)^2 \cdot 12$
 $12(y-2) = (x-2)^2$
 Vertex: (2, 2)
 $x^2 = + \uparrow \uparrow$
- 

4 4

24. Given Independence:
 $P(F \cap D) = P(F) \cdot P(D)$
 $.456 = .8 P(D)$
 $.57 = P(D)$
 $P(F|D) = \frac{P(F \cap D)}{P(D)} = \frac{.456}{.57} = .8$

$$4p = 12$$

$$p = 3$$

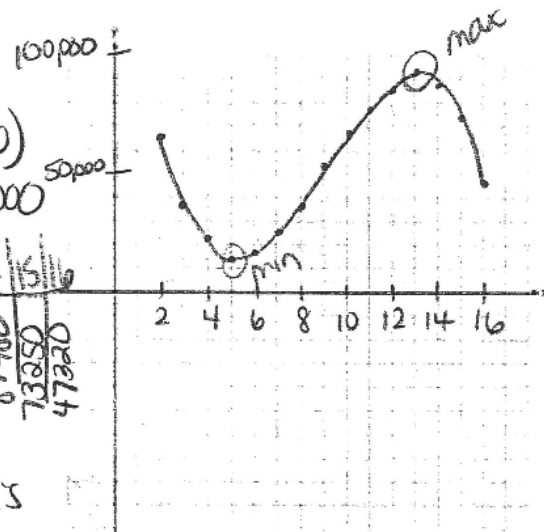
31. $x^2 + y^2 = 400$
 $y = x - 28$ Substitution
 $x^2 + (x - 28)^2 = 400$
 $x^2 + (x - 28)(x - 28) = 400$
 $x^2 + x^2 - 56x + 784 = 400$
 $2x^2 - 56x + 384 = 0$
 $x^2 - 28x + 192 = 0$
 $(x - 12)(x - 16) = 0$
 $x = 12$ $x = 16$
 $y = 12 - 28 = -16$ $y = 16 - 28 = -12$
 $\{(12, -16), (16, -12)\}$

32. $ME = 2SD$
 $= 2(.042)$
 $= .084$
 $= .08$

The percent of users making in-app purchases will be within 8% of 35%.

37.
 $P(x) = R(x) - C(x)$
 $= 550x^3 - 12,000x^2 + 83,000x + 7,000$
 $- (880x^3 - 21,000x^2 + 150,000x - 160,000)$
 $= -330x^3 + 9,000x^2 - 67,000x + 167,000$

x	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P(x)	66260	38090	21880	15730	17720	25810	38040	52430	67000	79770	88760	91990	87480	73250	47320



Least Profitable: yr 5 b/c there's a minimum there

Most Profitable: yr 13 b/c there's a maximum there