

Name Key

Review # 11

August 2018 Regents

Due: Tues. 6/11/19

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

9. $3x^2 + 2x + 7 = 0$ OR STORE
 $x = \frac{-2 \pm \sqrt{80}}{2(3)}$ $b^2 - 4ac = 4 - 4(3)(7) = -80$

$$= \frac{-2 \pm i\sqrt{16}\sqrt{5}}{6}$$

$$= \frac{-2 \pm 4i\sqrt{5}}{6} = \frac{-1 \pm 2i\sqrt{5}}{3}$$

3 4

10. Recursive = uses previous terms to figure out the next term
 $\therefore$ eliminates choices 1+3

Boat depreciates $\therefore$ Geometric
 keep mult. previous term by
 $(1 - .08) = .92$

11. $\sin^2(\theta) + \left(\frac{7}{25}\right)^2 = 1$
 $\sin^2(\theta) + \frac{49}{25} = 1$
 $\sin^2(\theta) = \frac{576}{625}$
 $\sin(\theta) = \pm \frac{24}{25}$
 $\tan(\theta) = \frac{\sin(\theta)}{\cos(\theta)}$

S	A
T	C

 $\therefore \sin(\theta) = -$ $\sin(\theta) = -\frac{24}{25}$ $\tan(\theta) = \frac{\sin(\theta)}{\cos(\theta)}$

2 3

12. $\frac{\sqrt[3]{x^2} \cdot \sqrt{x^5}}{\sqrt[6]{x}} = \frac{x^{2/3} \cdot x^{5/2}}{x^{1/6}} = \frac{x^{11/6}}{x^{1/6}} = x^{10/6} = x^{5/3}$
 or store

13. $S_n = \frac{a_1 - a_n r^n}{1 - r}$ on Ref. sheet

$$S_n = \frac{2 - 2(2.5)^n}{1 - 2.5}$$

$$= \frac{-24}{25}$$

$$\frac{1}{25}$$

$$= \frac{-24}{7}$$

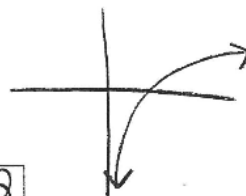
1 4

14. $x^6 y^4 (x^4 - 16) - 9(x^4 - 16)$ GCF
 $= (x^4 - 16)(x^6 y^4 - 9)$ DOTS
 $= (x^2 - 4)(x^2 + 4)(x^3 y^2 - 3)(x^3 y^2 + 3)$

15. $A - BC$
 $= -3 + 5i - (4 - 2i)(1 + 6i)$ or type into calc.
 $= -3 + 5i - (4 + 24i - 2i - 12i^2)$
 $= -3 + 5i - (4 + 22i + 12)$
 $= -3 + 5i - 4 - 22i - 12$
 $= -19 - 17i$

3 2

16. $x = 3^y$
 $\log_3 x = y$



$$28. \quad z = \frac{200 - 225}{18} = -1.39$$

$$z = \frac{245 - 225}{18} = 1.11$$

$$\text{Prob} = \text{normalcdf}(-1.39, 1.11) = .784$$

$$1200(.784) = 940.8$$

$\therefore 941$ students

$$29. \quad 6(x+3) \left(\frac{-3}{x+3} + \frac{1}{2} = \frac{x}{6} - \frac{1}{2} \right)^{x \neq -3} \quad \text{LCD: } 6(x+3)$$

$$-18 + 3(x+3) = x(x+3) - 3(x+3)$$

$$-18 + 3x + 9 = x^2 + 3x - 3x - 9$$

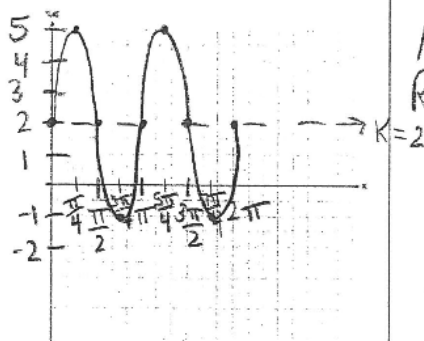
$$3x - 9 = x^2 - 9$$

$$0 = x^2 - 3x$$

$$0 = x(x-3)$$

$$x=0 \mid x=3 \quad \{0, 3\}$$

30.



$$\text{Amp} = 3$$

$$\text{Range} = [-3, 3] \rightarrow [-1, 5]$$

$$\text{Freq} = \frac{2}{2\pi} \quad 2 \text{ cycles in } 2\pi$$

$$\text{Per} = \frac{2\pi}{2} = \pi$$

$$\text{Xscr} = \frac{\pi}{4}$$

35.

Compounded continuously =

$$A = 2$$

$$P = 1$$

$$r = .0375$$

$$t = ?$$

$$A = Pe^{rt}$$

$$2 = 1e^{.0375t}$$

$$2 = e^{.0375t}$$

$$\log_e 2 = .0375t$$

$$\ln 2 = .0375t$$

$$18.5 = t$$

36. John found the means of the scores of the two rooms and subtracted the means. The mean score for the classical room was 7 higher than the rap room (82-75), or more 7 happened $\frac{4}{250} = .016$, which is less than .05 (rare). $\therefore$ It's likely the difference was due to the music (there's a sign. diff. in quiz scores).