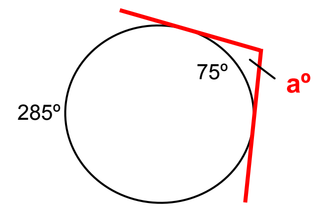
ALGEBRA II, 2ND EDITION
– ON-LINE TEST 16 –
REVISED: SEPTEMBER 2006

(This test covers material up to Lesson 64. Take this test after completion of Lesson 68.)

1. *Find the measure of angle a formed by the tangent lines.*



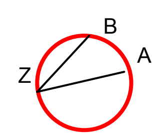
(A) 75º (B) 150º (C) 105º (D) 115º (E) none of these

2. *Solve for x:* $\dfrac{k+c}{x}+\dfrac{ny}{b}=m$

(A) $x=b(k+c)+ny-m$ (B) $x=-\dfrac{-b(k+c)-ny}{m}$ (C) $x=\dfrac{-b(k+c)+m}{ny}$

(D) $x=\dfrac{bc+bk}{bm-ny}$ (E) none of these

3. *In the circle at right,* $\overset{\frown}{AZB}$ *is a(n):*



(A) minor arc (B) central angle (C) major arc

(D) arcezoid (E) none of these

4. *At a temperature of 500 kelvins, 6 liters of an ideal gas had a pressure of 300 newtons per square meter. If the temperature was reduced to 250 kelvins, and the volume raised to 9 liters, what was the resulting pressure ?*

(A) 100 newtons/m^2 (B) 150 newtons/m^2 (C) 450 newtons/ m^2

(D) 900 newtons/ m^2 (E) none of these

5. *The volume of a quantity of an ideal gas was held constant. The initial temperature of 600 kelvins was reduced to 144 kelvins. If the initial pressure was 250 newtons per square meter, what was the pressure after the temperature change ?*

(A) $1041\frac{2}{3}$ newtons/m^2 (B) 345.6 newtons/m^2 (C) 60 newtons/m^2

(D) $41\frac{2}{3}$ newtons/m^2 (E) none of these

6. *Solve for x:* $2x^2 + 3x - 8 = 0$ *The solution contains a fraction* $\pm$ *another fraction with a radical numerator. What is this fraction with a radical numerator ?*

(A) $\pm\frac{\sqrt{41}}{4}$ (B) $\pm\frac{\sqrt{73}}{4}$ (C) $\pm\frac{\sqrt{-55}}{4}$ (D) $\pm\frac{\sqrt{17}}{4}$ (E) none of these

7. *Solve for x:* $x^2 + x - 1 = 0$ *The solution contains a fraction* $\pm$ *another fraction with a radical numerator. What is this fraction with a radical numerator ?*

(A) $\pm\frac{\sqrt{7}}{2}$ (B) $\pm\frac{\sqrt{17}}{4}$ (C) $\pm\frac{\sqrt{-3}}{2}$ (D) $\pm\frac{\sqrt{3}}{2}$ (E) none of these

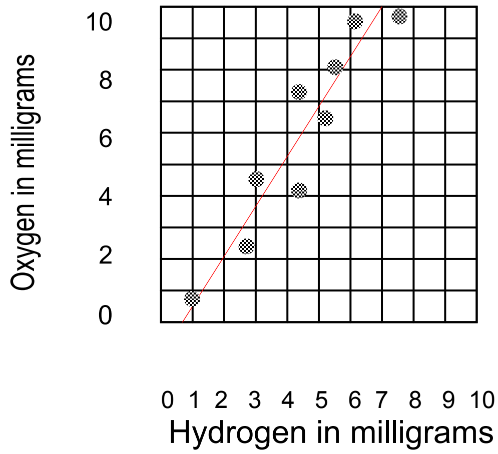
8. *Solve for x and y:* $\frac{3x}{5} + \frac{y}{2} = \frac{13}{10}$ *and* $.5y + .04x = 2.42$ *Then evaluate xy.*

(A) xy = 6 (B) xy = - 16 (C) xy = 30 (D) xy = - 10 (E) none of these

9. *Convert* ***6R - 6U*** *to polar form.*

(A) $6\sqrt{2}\measuredangle 300^o$ (B) $6\sqrt{2}\measuredangle 45^o$ (C) $6\measuredangle 45^o$ (D) $6\measuredangle 225^o$ (E) none of these

10. *The graph gives the data points from an experiment involving oxygen and hydrogen. Which of the following best approximates the equation, with oxygen as a function of hydrogen:* ***O = m H + b***



(A) O = .625 H + 0.75 (B) O = 1.6 H - 1.2

(C) O = .625 H – 1.2 (D) O = 4.0 H + 4.2

(E) O = 7.0 H + 10.0

11. *The number of science books checked out at the school library is directly proportional to the number of students in Physics class. If 42 books were checked out when 6 students were in physics class, how many books were checked out when there were 11 students in the class ?*

(A) 66 books (B) 47 books (C) 53 books (D) 77 books (E) none of these

12. *The number of yearly traffic accidents on Main St. varies inversely with the number of stop signs on Main St.'s intersections. If there were 10 accidents when the street had only 1 stop sign, how many stop signs in all must the street now have if there are only 2 accidents yearly ?*

(A) 2 (B) 4 (C) 5 (D) 20 (E) none of these

13. *John has 50 liters of a 10% peroxide solution. How many liters of a 60% peroxide solution should he add to get a 28% peroxide solution ?*

(A) 28 liters (B) 15 liters (C) $88\frac{8}{9}$ liters (D) $28\frac{1}{8}$ liters (E) none of these

14. *Sarah has 16 pounds of soup that is 1/4 chicken broth. How much chicken broth must she add to increase the chicken broth content to 1/3 ?*

(A) $\frac{1}{12}$ pound (B) 4 pounds (C) $1\frac{1}{3}$ pounds (D) 2 pounds (E) none of these

15. *Mr. Meyer entered the subway at High St. Station and traveled 16 miles on a heading of 165º (measured counterclockwise from reference of 0º for due east), then changed lines and traveled 25 miles on a heading of 70º. How far was he now from High St. Station ?*

(A) 27.6 mi N, 24 mi E (B) 27.6 mi N, 6.9 mi W (C) 25 mi N, 16 mi W

(D) 28.45 mi N (E) none of these

16. *Add* $17\angle\underline{60^\circ}$ *and* $8\angle\underline{220^\circ}$

(A) $24.67\angle\underline{53.63^\circ}$ (B) $9.9\angle\underline{76.10^\circ}$ C) $25\angle\underline{280^\circ}$

(D) $10\angle\underline{13.90^\circ}$ (E) none of these

17. *Simplify:* $\dfrac{b}{a}+\dfrac{7}{3+\dfrac{2a}{x}}$

(A) $\dfrac{b+4ax+3bx}{a}$ (B) $\dfrac{3b+4ab+7ax}{2a^2+3a}$ (C) $\dfrac{b+7x}{3(a+x)}$

(D) $\dfrac{2ab+7ax+3bx}{2a^2+3ax}$ (E) none of these

18. $2i^7-i^4+2\sqrt{-3}\sqrt{-12}+3\sqrt{-4}$

(A) $-19-2i$ (B) $-13+4i$ (C) $11+4i$ (D) $-11-8i$ (E) none of these

19. *Simplify:* $\sqrt[3]{12\sqrt{12}}$

(A) $12^{\frac{2}{3}}$ (B) $2(3^{\frac{2}{3}})$ (C) $2\sqrt{3}$ (D) $\sqrt[3]{12}^{\frac{2}{3}}$ (E) none of these

20. *If:* $\frac{-3z+6}{3}+\frac{z}{5}=12$, *then* $4z^2+2z+50=$

(A) 650 (B) 700 (C) 750 (D) 800 (E) none of these