ALGEBRA II, 2ND EDITION
– ON-LINE TEST 20 –
REVISED: SEPTEMBER 2006

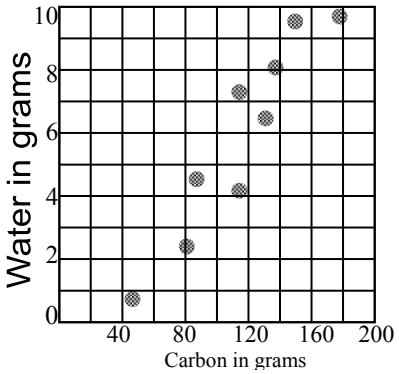
(This test covers material up to Lesson 80. Take this test after completion of Lesson 84.)

1. *Write $5\angle \underline{210°}$ in rectangular coordinates.*

(A) 3.46 R – 2 U (B) 2.5 R - 3.46 U (C) - 4.33 R - 2.5 U

(D) - 2 R + 3.46 U (E) none of these

2. *Which equation best represents the data indicated on the graph ?.*



(A) $w = 15c - 75$ (B) $w = 15c - \frac{8}{3}$

(C) $w = \frac{3}{2}c - 75$ (D) $w = \frac{1}{14}c - 3$

(E) $w = -10c + 170$

3. *Simplify:* $\frac{3+\sqrt{24}}{6\sqrt{8}}$

(A) $\frac{3\sqrt{2}+4\sqrt{3}}{24}$ (B) $\frac{1+\sqrt{3}}{2}$ (C) $\frac{3+8\sqrt{3}}{6}$ (D) $\frac{-15}{36\sqrt{2}-48\sqrt{3}}$ (E) none of these

4. *John walked 27 miles to the car dealer. Because his car was 9 times faster than he was, John drove home in 4 hours less than it took him to walk to the car dealer. How many hours did it take him to drive home ?*

(A) 0.5 (B) 6 (C) 4.5 (D) 10 (E) none of these

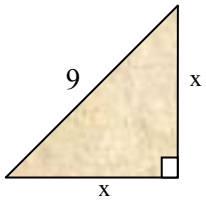
5. *Add:* $\dfrac{x+4}{x^2+4x-12} + \dfrac{x+6}{x-2}$

(A) $\dfrac{x+4}{x^2-4x+4}$ (B) $\dfrac{x+5}{x^2-4}$ (C) $\dfrac{x+4}{x-2}$ (D) $\dfrac{40+13x+x^2}{x^2+4x-12}$ (E) none of these

6. *Solve for z:*
$$x = 2.5y$$
$$x + y + z = 66$$
$$x - 2y - 2z = -12$$

(A) z = - 102 (B) z = 16 (C) z = 10 (D) z = - 74 (E) none of these

7. *Find x.*



(A) $4.5\sqrt{2}$ (B) $9\sqrt{2}$ (C) 45 (D) 9 (E) none of these

8. *Solve:* $\sqrt{b-20} + 4 = \sqrt{b}$

(A) $\varnothing$ (B) $b = \dfrac{52}{5}$ (C) b = - 16 (D) $b = \dfrac{81}{4}$ (E) none of these

9. *Add:* -3∠-125° + 7∠115°

(A) - 1.24 R + 8.80 U (B) 3.89 R - 4.68 U (C) - 4.68 R + 8.80 U

(D) 0.15 R + 1.73 U (E) none of these

10. *Convert 2.54 liters to cubic centimetes.*

(A) $\dfrac{(2.54)(2.54)(2.54)}{1000} cm^3$ (B) $\dfrac{(10)(10)(10)}{(1000)(2.54)} cm^3$ (C) $\dfrac{(2.54)(10)}{(1000)} cm^3$

(D) $(1000)(2.54)cm^3$ (E) none of these

11. *Reds vary inversely as browns squared. If 100 reds go with 4 browns, how many reds go with 10 browns ?*

(A) 16 (B) 625 (C) 2 (D) 40 (E) none of these

12. *Solve:* $-5x^2 + 5 = -2x$ *The solution contains a reduced fraction ± another reduced fraction with a radical numerator. What is this fraction with a radical numerator ?*

(A) $\pm\frac{2\sqrt{6}\ i}{5}$ (B) $\pm\frac{2\sqrt{26}}{13}$ (C) $\pm\frac{\sqrt{26}\ i}{5}$

(D) $\pm\frac{\sqrt{26}}{5}$ (E) none of these

13. *Solve for y:*
$$\begin{aligned} x &= 7y \\ x + y + z &= 80 \\ 2x - y + z &= 105 \end{aligned}$$

(A) - 7 (B) 15 (C) $-\frac{175}{13}$ (D) 35 (E) none of these

14. *Simplify:* $\frac{3\sqrt{45} - 5\sqrt{5}}{3\sqrt{5} - 5\sqrt{3}}$

(A) $3 - \sqrt{\frac{5}{3}}$ (B) $\frac{-2\sqrt{15}}{3} - 2$ (C) $-2 + 2\sqrt{\frac{5}{3}}$ (D) $\frac{135 - 25\sqrt{15}}{-30}$ (E) none of these

15. *A point is pulled by two ropes: one to the left and up 34° with a magnitude of 5, the other to the right and up 16° with a magnitude of 7. What is the resultant force on the point ?*

(A) $28.98\angle\underline{9.4°}$ (B) $5.38\angle\underline{61.5°}$ (C) $0.85\angle\underline{1.0°}$ (D) $6\angle\underline{25.0°}$ (E) none of these

16. *Solve for x:* $\sqrt[3]{x^3+4x-5}-x=0$ *Then evaluate:* $x^2-x+\frac{11}{16}=$

(A) 1 (B) $2\pm\frac{\sqrt{11}}{4}$ (C) $5\frac{5}{16}$ (D) $\varnothing$ (E) none of these

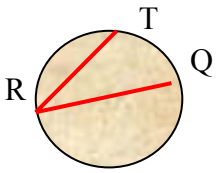
17. *Simplify:* $\sqrt[5]{(25)^2\sqrt{5}}$

(A) $5^{\frac{9}{4}}$ (B) $25\sqrt[8]{5}$ (C) $5^{\frac{9}{10}}$ (D) $3125\sqrt{5}$ (E) none of these

18. *If the cost of corn varies directly with the number of ears purchased, and 6 ears cost 9 dollars, how many ears would cost 162 dollars ?*

(A) 18 (B) 243 (C) 486 (D) $\frac{1}{3}$ (E) none of these

19. *In the circle at right, $\angle QRT$ is a(n):*



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

(D) inscribed angle (E) none of these

20. *The roses exceeded the violets by 222. If the number of roses was 60 more than twice the number of violets, how many violets were there ?*

(A) 81 (B) 54 (C) 162 (D) 222 (E) none of these