ALGEBRA II, 2ND EDITION
– ON-LINE TEST 26 –
REVISED: SEPTEMBER 2006

(This test covers material up to Lesson 104. Take this test after completion of Lesson 108.)
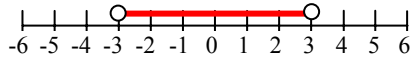
1. *Solve for x and y:* $\begin{aligned} 5x - 3y &= 135 \\ 3x - 5y &= -15 \end{aligned}$ *Then evaluate: (x – y) y =*

(A) 6   (B) - 78   (C) - 700   (D) 450   (E) none of these

2. *Find the number that is* $\dfrac{3}{4}$ *of the way from* $3\dfrac{1}{5}$ *to* $5\dfrac{2}{3}$.

(A) $\dfrac{101}{20}$ (B) $\dfrac{37}{15}$ (C) $4\dfrac{17}{20}$ (D) $\dfrac{37}{20}$ (E) none of these

3. *Which equation is graphed on the number line at right ?*

(A) $|x| \le 3$ (B) $-3 > |x| > 3$ (C) $-|x| - 2 < -5$ (D) $|x| + 3 < 6$ (E) none of these

4. *What is the axis of symmetry for the graph of* $y = x^2 + 6x + 5$ *?*

(A) x = - 3   (B) y = - 4   (C) x = - 5   (D) y = - 1   (E) none of these

5. *The dealer purchased an item, marked it up (increased its price), and sold it to a customer for $560. If the markup was 40% of the dealer's purchase price, what did the* <u>*dealer*</u> *pay for the item ?*

(A) $ 224   (B) $ 784   (C) $ 160   (D) $336   (E) none of these

6. *Find fg(7) if* $f(x) = x + 4$; *D = {Reals} and* $g(x) = x^2 + 4$; *D = {Positive integers}.*

(A) 583   (B) 64   (C) 125   (D) $\varnothing$ (E) none of these

7. *Divide $64x^3 - 27y^3$ by $4x - 3y$*

(A) $16x^2 - 9y^2$ (B) $16x^2 + 9y^2$ (C) $16x^2 - 48x^2y + 12xy - 36xy^2 + 9y^2$

(D) $(4x - 3y)^2$ (E) none of these

8. *Show that 0.00000403 is a rational number by writing it as a fraction of integers.*

(A) $\dfrac{4.03}{1000000}$ (B) $\dfrac{403}{9900000}$ (C) $\dfrac{403}{100000000}$ (D) $\dfrac{403}{1000000000}$ (E) none of these

9. *What is the y-coordinate of the vertex in the graph of $y = x^2 - 16x + 45$*

(A) 45   (B) 109   (C) -19 (D) -45 (E) none of these

10. *If $f(x) = x^2 + 3x$, find f(-3) for the Domain = {Positive Integers}.*

(A) 0   (B) 18   (C) 27   (D) $\varnothing$ (E) none of these
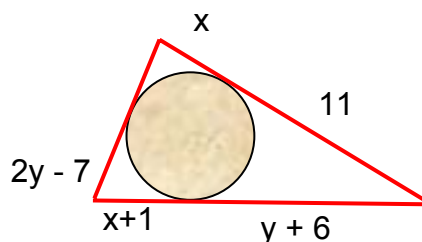
11. Simplify: $\dfrac{a}{b^2 a - \dfrac{2a}{b + \dfrac{1}{b}}}$

(A) $\dfrac{1}{b^2 - 2ab^3}$ (B) $\dfrac{b(1+b)}{-2 + b^3 + b^4}$ (C) $\dfrac{1 + b^2}{-2b + b^2 + b^4}$

(D) $\dfrac{b^2 + 1}{b^3 - 2b}$ (E) none of these

12. *Find the perimeter of this triangle.*

(A) 32   (B) 23   (C) (2, 5)

(D) 30   (E) none of these

x

11

2y - 7

x+1

y + 6

13. *Write* $1.14\overline{504}$ *as a fraction of integers*

(A) $\dfrac{11431}{900}$　　(B) $\dfrac{114504}{100000}$　　(C) $\dfrac{11439}{9990}$　　(D) $\dfrac{1261}{1110}$　　(E) none of these

14. *Simplify:* $\dfrac{4i + i^2}{-i^3 + 2}$

(A) $\dfrac{6}{5} + \dfrac{7i}{5}$　　(B) $\dfrac{2}{5} + \dfrac{9i}{5}$　　(C) $-\dfrac{6}{5} + \dfrac{7i}{5}$　　(D) $\dfrac{4}{3} + \dfrac{i}{3}$　　(E) none of these

15. *Find a:* $c\left(\dfrac{z+y}{b} - \dfrac{1}{a}\right) = x$

(A) $\dfrac{b}{y+z} - \dfrac{x}{c}$　　(B) $\dfrac{bc+x}{cy+cz}$　　(C) $\dfrac{b}{-bxc+y+z}$

(D) $-\dfrac{bc}{bx-cy-cz}$　　(E) none of these

16. *A dealer purchased an item for $ 120. He then marked it up (increased its price) and sold it to a customer. If the markup was 30 % of the <u>selling</u> price, what was the selling price ?*

(A) $160　　(B) $156　　(C) $171.43　　(D) $204　　(E) none of these

17. *Simplify:* $\sqrt[5]{27\sqrt[3]{9}}$

(A) $3^{\frac{1}{3}}$　　(B) $3^{\frac{4}{5}}$　　(C) 3　　(D) $3^{\frac{6}{75}}$　　(E) none of these

18. *Joe thought of three consecutive multiples of seven such that the sum of the first and third is twenty-eight less than three times the second.*

(A) 3, 4, 5　　(B) -35, -28, -21　　(C) -7, 0, 7　　(D) 21, 28, 35　　(E) none of these

19. *Divide $125y^3 + 8x^3$ by $2x + 5y$*

(A) $\varnothing$ (B) $4x^2 + 25y^2$ (C) $(2x + 5y)^2$ (D) $4x^2 - 10xy + 25y^2$ (E) none of these

20. Simplify: $\dfrac{\left(y^{3b+3}\right)^m}{y^{\frac{m}{3}}}$

(A) $y^{\frac{8\,m}{3}+3\,b\,m}$ (B) $y^{\frac{9\,b}{m}+9}$ (C) y^{b+1} (D) $y^{3\,b+\frac{8\,m}{3}}$ (E) none of these