

ALGEBRA II, 2ND EDITION
 – ON-LINE TEST 22 –
 REVISED: SEPTEMBER 2006

(This test covers material up to Lesson 88. Take this test after completion of Lesson 92.)

1. Simplify: $\frac{7-2i}{2-7i}$

- (A) -1 (B) $\frac{7+5i}{2}$ (C) $i-1$ (D) $\frac{7}{2} + \frac{5i}{2}$ (E) none of these

2. Is this system of equations consistent, inconsistent, or dependant ?

- (A) consistent (B) inconsistent (C) dependant
 (D) inconsistent and dependant (E) none of these

$$4x - 3y = 15$$

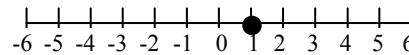
$$7y - 35 = 9\frac{1}{3}x$$

3. Simplify: $\frac{1}{4 + \frac{a}{4 + \frac{4}{b}}}$

- (A) $\frac{4+b}{16+(4+a)b}$ (B) $\frac{1}{4ab}$ (C) $\frac{4(1+b)}{16(1+a+b)}$ (D) $\frac{4+4b}{ab+16b+16}$ (E) none of these

4. Which inequality is graphed at right ?

$D = \{ \text{Natural numbers: } 1, 2, 3, \dots \}$



- (A) $-2 \leq -x-3$ (B) $-x-3 \leq -1$ (C) $-4-x > -6$ (D) $-x \leq -2$ (E) none of these

5. Simplify: $a^{p/5} b^{2m} a^{4p} b^{m/4}$

- (A) $a^{4p/5} b^{m/2}$ (B) $a^{\frac{4p^2}{5}} b^{\frac{m^2}{2}}$ (C) $a^{4p/5} b^{2m/4}$ (D) $a^{21p/5} b^{9m/4}$ (E) none of these

6. Solve for x and y : $x^2 + y^2 = 17$ There are two solutions: (x_1, y_1) and (x_2, y_2) .
 $y - 1 = x$

Evaluate: $x_1 + y_1 + x_2 + y_2 =$

- (A) $2\sqrt{19}$ (B) 0 (C) $-2 - 2\sqrt{19}$ (D) 2 (E) none of these

7. Find the slope of the line that passes through $(-3, 56)$ and $(-7, -65)$

- (A) $\frac{10}{9}$ (B) $-\frac{9}{4}$ (C) $-\frac{3}{2}$ (D) $\frac{121}{4}$ (E) none of these

8. Simplify: $\frac{4 + 5i}{5 - 5i}$

- (A) $\frac{9i - 1}{50}$ (B) $-\frac{1}{10} + \frac{9i}{10}$ (C) \emptyset (D) $\frac{4}{5} - i$ (E) none of these

9. Find the volume (in liters) of 41 moles of gas under 4 atmospheres at 159K.
($PV = nRT$ with $R=0.0821$)

- (A) 535.21 L (B) 133.802 L (C) 12.5633 L (D) 1.27355 L (E) none of these

10. Solve the system: $x^2 + y^2 = 37$ There are two solutions: (x_1, y_1) and (x_2, y_2) .
 $3x - 9 = y$

Evaluate: $x_1 + y_1 + x_2 + y_2 =$

- (A) 0 (B) $-21\frac{2}{3}$ (C) $3\frac{3}{5}$ (D) $7\frac{3}{7}$ (E) none of these

11. Simplify: $9i^2 - \sqrt{-36}$

- (A) -15 (B) $-6i - 9$ (C) $-6 - 9i$ (D) 15 (E) none of these

12. Find the distance between $(9, -3)$ and $(-1, 3)$

- (A) $-\frac{5}{3}$ (B) 10 (C) $2\sqrt{15}$ (D) \emptyset (E) none of these

13. Simplify: $\frac{m}{1 + \frac{x}{p + \frac{n}{2}}}$

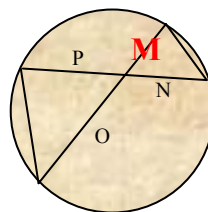
- (A) $\frac{mn + 2mp}{n + 2p + 2x}$ (B) $\frac{m(n + 2p)}{2x}$ (C) $m + \frac{2x}{n + 2p}$
 (D) $\frac{m(n + 2p)}{2p + np + 2x + nx}$ (E) none of these

14. Solve for B: $2BT_D + 12T_D = 38$
 $2BT_D - 12T_D = 6$

- (A) $\frac{4}{3}$ (B) $\frac{33}{4}$ (C) $\frac{20}{3}$ (D) 11 (E) none of these

15. Solve for M

- (A) $\frac{PO}{N}$ (B) $\frac{ON}{P}$ (C) $\frac{PN}{O}$
 (D) $\frac{N}{OP}$ (E) none of these

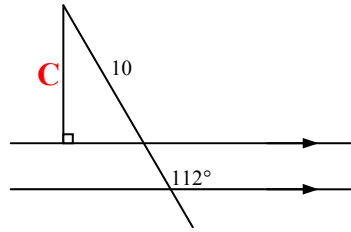


16. Simplify: $\frac{4 - \sqrt{20}}{2 - 2\sqrt{5}}$

- (A) $\frac{3 - \sqrt{5}}{4}$ (B) 2 (C) $\frac{3 + 2\sqrt{5}}{4}$ (D) 1 (E) none of these

17. Find C

- (A) 9.27 (B) - 3.75 (C) 8
 (D) 3.75 (E) none of these



18. Simplify: $\frac{x^{b-3}y^{3b}}{\frac{b}{x^3y^{b+3}}}$

- (A) $x^{\frac{4}{3}b-3}y^{4b-3}$ (B) $x^{\frac{3b-9}{b}}y^{\frac{3b}{b+3}}$ (C) $(xy^{b^2-9})^{b^2}$
 (D) $x^{-3+\frac{2b}{3}}y^{-3+2b}$ (E) none of these

19. Solve for r : $\frac{a+b}{2c} = c \left(\frac{1}{b} - \frac{1}{r} \right)$

- (A) $\frac{2bc^2}{b^2+ab-2c^2}$ (B) $\frac{2b}{ab-1}$ (C) $-\frac{2bc^2}{ab+b^2-2c^2}$
 (D) $-\frac{2b}{-2+ab+b^2}$ (E) none of these

20. Write $5R - 7U$ in polar form.

- (A) $8.60 \angle \underline{54.46^\circ}$ (B) $8.60 \angle \underline{125.54^\circ}$ (C) $8.60 \angle \underline{216.54^\circ}$
 (D) $8.60 \angle \underline{305.54^\circ}$ (E) none of these