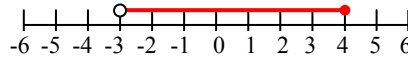


ALGEBRA II, 2ND EDITION
 – ON-LINE TEST 24 –
 REVISED: SEPTEMBER 2006

(This test covers material up to Lesson 96. Take this test after completion of Lesson 100.)

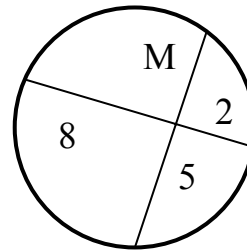
1. Which conjunction corresponds to the graph at right? [$D = \{\text{Reals}\}$]



- (A) $4 \geq x \geq -3$ (B) $-5 < x - 2 \leq 6$ (C) $-3 < x \leq 4$ (D) $3 > x \geq -4$ (E) none of these

2. Find M :

- (A) 1.25 (B) 3.2 (C) 20
 (D) 0.8 (E) none of these



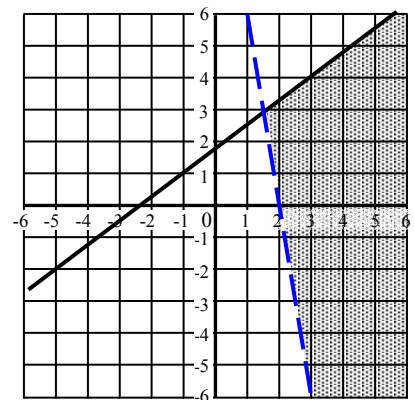
3. Solve: $2x - 3y + z = 17$
 $x - z + 4y = -2$ Then evaluate: $xyz =$
 $y + 5z - 2x = 85$

- (A) -54 (B) $2\frac{4}{5}$ (C) 216 (D) \emptyset (E) none of these

4. Which system of inequalities corresponds to the graph of the shaded area at right?

- (A) $\begin{cases} y \leq -\frac{3}{4}x + \frac{7}{4} \\ y \leq \frac{1}{6}x + 12 \end{cases}$ (B) $\begin{cases} y \leq -\frac{3}{4}x + \frac{7}{4} \\ y < \frac{1}{6}x + 12 \end{cases}$ (C) $\begin{cases} y \leq \frac{3}{4}x + \frac{7}{4} \\ y > -6x + 12 \end{cases}$

- (D) $y = \frac{3}{4}x + \frac{7}{4} < y = -6x + 12$ (E) none of these



5. The motorboat could go 15 miles downstream in 3 hours, but took 2 hours longer to go 10 miles upstream. What is the speed of the current ?

- (A) $1\frac{1}{2}$ mph (B) 1 mph (C) $\frac{1}{2}$ mph (D) 0 mph (E) none of these

6. What is the solution of $5 = 17x^2 - 200x$?

- (A) 1 real number (B) 2 complex numbers that are conjugates
(C) 2 real unequal numbers (D) \emptyset (E) none of these

7. Which of the following sets of ordered pairs is **not** a function ?

- (A) (1,2) (2,3) (3,2) (B) (1,1)(2,-1)(-1,2) (-2,-2) (C) (0,0)(3,0)(-3,0)
(D) (1,1) (2,2) (3,3) (2,-1) (E) none of these

8. Solve the system: $\{3x - y = 6\}$ $\{xy = 24\}$ There are two solutions: (x_1, y_1) and (x_2, y_2) . Evaluate: $x_1 + y_1 + x_2 + y_2 =$

- (A) 8 (B) 0 (C) $8 + 6\sqrt{3} i$ (D) -4 (E) none of these

9. If $f(x) = 2x - 5x^2$ and $g(x) = 5x + 2$, what is $f(4)$?

- (A) -2376 (B) -1584 (C) -362 (D) -50 (E) none of these

10. The number of rabbits vary inversely as the number of foxes and directly as the number of cabbages. When there were 120 rabbits, there were 15 foxes and 300 cabbages. How many cabbages were there when there were 90 rabbits and 10 foxes ?

- (A) 225 (B) 900 (C) 200 (D) 150 (E) none of these

11. Simplify: $4i^4 - 3i^3 - \sqrt{-3}\sqrt{3}$

- (A) $3 - 3i^3 + 4i^4$ (B) $7 + 3i$ (C) $4 - 6i$ (D) $4i$ (E) none of these

12. Find the distance between (3, 4) and (4, -3)

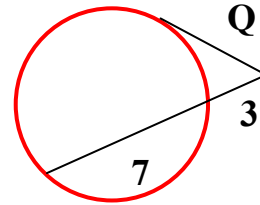
- (A) $5\sqrt{2}$ (B) 7 (C) $\sqrt{2}$ (D) $7\sqrt{2}$ (E) none of these

13. If a boat in a 4 mph current can travel 76 miles downstream in the same time it takes to travel 20 miles upstream, what is the speed of the boat in still water ?

- (A) $\frac{7}{5}$ mph (B) $6\frac{6}{7}$ mph (C) 7 mph (D) 12 mph (E) none of these

14. If line segment Q is tangent to the circle, find Q .

- (A) 5 (B) $\sqrt{21}$ (C) $\sqrt{30}$ (D) $\sqrt{70}$ (E) none of these



15. What is the solution to the equation $4x^2 + 16 - 5x = 20$

- (A) 1 real number (B) 2 complex numbers that are conjugates
(C) 2 real unequal numbers (D) \emptyset (E) none of these

16. Solve: $-3x^2 = 6x + 9$ The solution is a complex number consisting of a “real” part \pm an “imaginary” part. What is this “imaginary” part of the complex number solution ?

- (A) $\pm 2\sqrt{3} i$ (B) $\pm \sqrt{2} i$ (C) $\pm \sqrt{6} i$ (D) $\pm \sqrt{15} i$ (E) none of these

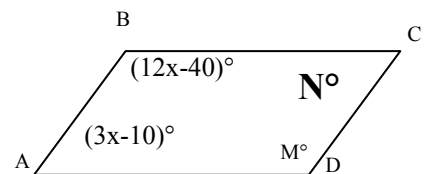
17. Solve the system: $x^2 + y^2 = 289$
 $2x^2 - y^2 = 143$ The solutions will have the form $(\pm a, \pm \sqrt{b})$

What is b ?

- (A) 17 (B) 145 (C) 3 (D) -37 (E) none of these

18. ABCD is a parallelogram. Find N.

- (A) 36 (B) $15\frac{1}{3}$ (C) 144 (D) 16 (E) none of these



19. Add: $-30\angle-150^\circ - 25\angle40^\circ$

- (A) $-45.13\text{ R} - 1.07\text{ U}$ (B) $45.13\text{ R} + 31.07\text{ U}$ (C) $-55\angle-110^\circ$
(D) $6.83\text{ R} - 1.07\text{ U}$ (E) none of these

20. Find **B**.

- (A) $8\sqrt{3}$ (B) $6\sqrt{5}$ (C) 6 (D) $4\sqrt{3}$ (E) none of these

