MATH 115
Test 1 Review

Solve the equation.

1) $\frac{9x}{2} + 9 = \frac{1}{2}$ 1) _____

2) $\frac{2}{x} - \frac{1}{3} = \frac{5}{x}$ 2) _____

3) $\frac{1}{x} + \frac{1}{x+8} = \frac{x+9}{x+8}$ 3) _____

4) $\frac{7}{y+3} - \frac{5}{y-3} = \frac{4}{y^2-9}$ 4) _____

5) $1 + \frac{1}{x} = \frac{30}{x^2}$ 5) _____

6) $\frac{5}{x+2} = \frac{4}{x-3}$ 6) _____

7) $\sqrt{x-2} = 4$ 7) _____

8) $\sqrt{3x+2} = 3$ 8) _____

9) $\sqrt{5x-6} = 4 - x$ 9) _____

10) $\sqrt{2x} + 2 = x - 2$ 10) _____

11) $x^4 - 40x^2 + 144 = 0$ 11) _____

12) $x^4 - 18x^2 + 32 = 0$ 12) _____

Multiply. Write the result in the form a + bi.

13) $(8 + 5i)(4 + 9i)$ 13) _____

14) $(9 - 2i)(5 + 8i)$ 14) _____

Divide.

15) $\frac{2 + 7i}{9 + 8i}$ 15) _____

16) $\frac{1 - 8i}{5 - 8i}$ 16) _____

Solve the problem.

17) If 4 apples cost $2.00, how much would 10 apples cost? 17) _____

18) A painter can finish painting a house in 4 hours. Her assistant takes 6 hours to finish the same job. How long would it take for them to complete the job if they were working together? 18) _____

19) One pump can drain a pool in 3 minutes. When a second pump is also used, the pool only takes 2 minutes to drain. How long would it take the second pump to drain the pool if it were the only pump in use? 19) _____

20) An object is thrown upward from the top of a 160–foot building with an initial velocity of 48 feet per second. The height h of the object after t seconds is given by the quadratic equation $h = -16t^2 + 48t + 160$. When will the object hit the ground? 20) _____

21) If $h = -16t^2 + 224t$ represents the height of a firework, in feet, t seconds after is was fired, when will the firework be 784 feet high? 21) _____

Solve for the indicated variable.

22) Solve $r = \sqrt{\frac{3V}{\pi h}}$ for V. 22) _____

23) Solve $x = \sqrt{r^2 - y^2}$ for r. 23) _____

24) Solve $\frac{1}{a} + \frac{1}{b} = \frac{1}{c}$ for b. 24) _____

Answer Key
Testname: MATH 115 TEST 1 REVIEW

1) $\left\{-\frac{17}{9}\right\}$
2) {–9}
3) {1}
4) {20}
5) {–6, 5}
6) {23}
7) {18}
8) $\left\{\frac{7}{3}\right\}$
9) {2}
10) {8}
11) {–2, 2, –6, 6}
12) $\{-4, 4, -\sqrt{2}, \sqrt{2}\}$
13) –13 + 92i
14) 61 + 62i
15) $\frac{74}{145} + \frac{47}{145}i$
16) $\frac{69}{89} - \frac{32}{89}i$
17) $5.00
18) $2\frac{2}{5}$ hr
19) 6 min
20) 5 sec
21) 7 sec
22) $V = \frac{\pi r^2 h}{3}$
23) $r = \sqrt{x^2 + y^2}$
24) $b = \frac{ac}{a - c}$