Math 011 – Practice Test 6
Show all work. Simplify all answers. Leave all answers exact (reduced fractions not rounded decimals – unless otherwise indicated).

1) There were 437 tickets purchased for a major league baseball game. The lower reserved tickets cost $9.50 and the upper tickets cost $10.00. The total amount of money spent was $4313.00. How many of each kind of ticket was purchased?

2) Simplify
\[\sqrt{49}\]

3) Simplify
\[-\sqrt{64}\]

4) Simplify.
\[\sqrt{(38d)^2}\]

5) Simplify by factoring.
\[\sqrt{75}\]
6) Simplify by factoring.
\( \sqrt{72a^7} \)

7) Multiply and then simplify by factoring, if possible.
\( \sqrt{3}\sqrt{6} \)

8) Multiply and then simplify by factoring, if possible.
\( \sqrt{12x^2y^3}\sqrt{6xy^6} \)

9) Divide and simplify.
\( \frac{\sqrt{90}}{\sqrt{40}} \)

10) Simplify.
\( \sqrt{\frac{49}{81}} \)
11) Rationalize the denominator.
\[ \frac{\sqrt{10}}{\sqrt{7}} \]

12) Rationalize the denominator.
\[ \frac{7}{\sqrt{3}} \]

13) Rationalize the denominator.
\[ \frac{\sqrt{63}}{\sqrt{90x}} \]

14) Add. Simplify by collecting like radical terms, if possible.
\[ 4\sqrt{10} + 3\sqrt{10} \]

15) Subtract. Simplify by collecting like radical terms, if possible.
\[ \sqrt{125} - 4\sqrt{5} \]
16) Multiply.
\[ \sqrt{3}(\sqrt{10} - 1) \]

17) Multiply.
\[ (\sqrt{8} - \sqrt{5})(\sqrt{8} + \sqrt{5}) \]

18) Rationalize the denominator.
\[ \frac{8}{\sqrt{2} - \sqrt{10}} \]

19) Solve
\[ \sqrt{2x + 4} = 17 \]
20) Solve
\[28 - 4\sqrt{7n} = 0\]

21) Solve
\[\sqrt{3x - 24} = x + 2\]

22) Solve for x.
\[x^2 + 18x + 4 = 0\]

23) Solve for r.
\[r^2 + 3r = 5\]
24) Find the vertex then circle the correct graph
\[ y = x^2 + 2x - 3 \]

Vertex:
25) Given the function $f(y) = 5y + 7$, find each of the following.

$f(8) =$

$f(-2) =$

$f(6.7) =$