Units 1 and 2 Test Review

1.) $\sqrt{84}$ $\quad \frac{48}{5}$

$9.2 \boxed{<} 9.6$

2.) $2.\overline{2} = 2.22$ 3rd

$\frac{11}{5} = 2.20$ 2nd (Add the 0)

$\sqrt{7} = 2.60$ 4th

$2.1 = 2.10$ 1st

$\boxed{2.1, \frac{11}{5}, 2.\overline{2}, \sqrt{7}}$

3.) π $\quad \frac{18}{5}$

$3.14 \boxed{<} 3.60$

4.) $\sqrt{405}$

$\sqrt{81}\ \sqrt{5}$

$9\sqrt{5}$

D.

or $\sqrt{405} = 20.1\ldots$

X A.) 15

X B.) $81\sqrt{5}$ (Bigger than 20)

X C.) 135

(D.) $9\sqrt{5} = 20.1\ldots$

5.) (3)$\sqrt{89x}$

(30)$\sqrt{89}$

$30 \div 3 = 10^2 = 100$

D.

6.) $\sqrt{75}$ or $\sqrt{75} = 8.66\ldots$

$\sqrt{25}\ \sqrt{3}$

$5\sqrt{3}$

D.

~~A.~~) $3\sqrt{5} = 6.7\ldots$

~~B.~~) $15\sqrt{5} = 33.5\ldots$

~~C.~~) $25\sqrt{3} = 43.3\ldots$

(D.) $5\sqrt{3} = 8.6\ldots$

GCF → Think Smaller (smaller number and exponent)

LCM → Think Bigger (Bigger number and exponent)

7.) $12u^3v^3w^3 \quad 20u^2vw^3$

12 → 12, 24, 36, 48, (60)

20 → 20, 40, (60)

$LCM = 60u^3v^3w^3$ B.

(All variables to biggest exponent.

or

~~A.~~) $4u^5v^4w^6$ X (4 is small)

(B.) $60u^3v^3w^3$

~~C.~~) $60u^5v^4w^6$ (There is no u^5)

~~D.~~) $4u^2vw^3$ (4 is small)

8.) $108x^3y^4z^4$ $60x^3y^3z$ $20x^2y^2z^3$

108 → 108, 216, 324, 432, 540

60 → 60, 120, 180, ... 540

20 → 20, 40, 60, 80, ... 540

$LCM = 540\,x^3y^4z^4$ **A.**

Or

A.) $540x^3y^4z^4$

~~B.)~~ $12x^3y^3z$ (No, 12 is small)

~~C.)~~ $12x^3y^3$ (12 is small)

D.) $540x^6y^7z^5$ (No x^6)

9.) ~~A.)~~ $\sqrt{43x}$ ~~B.)~~ $\sqrt{43}$

$15 \div 1 = 15^2 = 225$

B.

10.) GCF → Small

$91x^3y$ $14x^2y^2$

$\frac{91}{1 \cdot 91}$ $\frac{14}{1 \cdot 14}$

~~1~~ · 13 2 · ~~7~~

$GCF = 7x^2y$

B.

or

~~A.)~~ $7x^2y^2$ (y^2 is Big)

B.) $7x^2y$

~~C.)~~ $182x^2y^2$ (Not small)

~~D.)~~ $182x^4y^3$ (Not small)

11.) $21x^4y^2$ $77x^3y^4$ $7x^5y^5$

21: $1\cdot21$, $3\cdot\textcircled{7}$ — 77: $1\cdot77$, $\textcircled{7}\cdot11$ — 7: $1\cdot\textcircled{7}$

GCF $= 7x^3y^2$ **D.**

~~A.~~ $7x^5y^5$ (x^5 is big)

~~B.~~ $231x^{12}y^{11}$ (231 is big)

~~C.~~ $231x^5y^5$ (231 is big)

D. $7x^3y^2$

12.) $6x^4yz^4$ $22xy^4$

6: $1\cdot6$, $\textcircled{2}\cdot3$ — 22: $1\cdot22$, $\textcircled{2}\cdot11$

GCF $= 2xy$ **A.**

A. $2xy$

~~B.~~ $2x^4y^4z^4$ (x^4 is big)

~~C.~~ $66x^5y^5z^4$ (66 is big)

~~D.~~ $66x^4y^4z^4$ (66 is big)

13.) $\sqrt{32}\times3\sqrt{2} = 24$ **B.**

14.) $4\sqrt{3}+5\sqrt{12} = 24.2\ldots$

~~A.~~ $9\sqrt{3} = 15.6\ldots$

B. $14\sqrt{3} = 24.2\ldots$

~~C.~~ $1\sqrt{3} = 1.73\ldots$

~~D.~~ $13\sqrt{3} = 22.5\ldots$

15.) $x=37$

$3\sqrt{x-1}+9$

$= 3\sqrt{37-1}+9$ ← If you put into calc use ( ) after √.

$= 3\sqrt{36}+9$

$= 3(6)+9$

$= 18+9 = 27$ **D.**

16.) $(x^2)^3 = (x^2)(x^2)(x^2) = x\cdot x\cdot x\cdot x\cdot x\cdot x = x^6$

B.

17.) $n=7$

$|n-8| - |4-n|$

$|7-8| - |4-7|$

$|-1| - |-3|$

$1 - 3 = -2$ **A**

18.) x^3y^k $\quad GCF = x^3y^3$

C. 3

19.) $5^4 \cdot 10^4 = (5 \cdot 10)^4$

$= 50^4$ **B**

20.) $\sqrt{32}$ $\quad$ or $\quad \sqrt{32} = 5.65\ldots$

$\sqrt{16}\,\sqrt{2}$

A.) $4\sqrt{2}$

A.) $4\sqrt{2} = 5.65\ldots$

~~B.) $4\sqrt{8} = 11.3\ldots$~~

~~C.) $16\sqrt{2} = 22.6\ldots$~~

~~D. 16~~

21.) $x=10$

~~A.)~~ $5\sqrt{10^2} \leq \frac{10}{4}$ $\quad$ ~~B.)~~ $(4 \cdot 10)^3 \leq 5(10)^2$ $\quad$ C.) $\sqrt{5 \cdot 10^2} \leq 5(10)^2$

$50 \leq 2.5$ $\quad$ $64000 \leq 500$ $\quad$ $22.3\ldots \leq 500$

(If you have the same monomial and one is under $\sqrt{\ }$, that is always going to be smaller.)

22.) $x=0.2$ $\quad 5\sqrt{0.2}$ $\quad 5(0.2)^2$ $\quad \frac{5}{2(0.2)}$ $\quad \frac{0.2}{5}$

2.2 $\quad 0.2$ $\quad 12.5$ $\quad 0.04$

$x=0.6$ $\quad 5\sqrt{0.6}$ $\quad 5(0.6)^2$ $\quad \frac{5}{2(0.6)}$ $\quad \frac{0.6}{5}$

3.9 $\quad 1.8$ $\quad 4.2$ $\quad 0.12$

Check 0.2 → A.) $0.04 > 0.2$ $\quad$ ~~B.)~~ $2.2 > 4.2$ $\quad$ ~~C.)~~ $0.04 > 12.5$ $\quad$ D.) $2.2 > 0.2$

Check 0.6 with A and D → ~~A.)~~ $0.12 > 1.8$ $\quad$ D.) $3.9 > 1.8$

D.