Algebra 1 Unit 1 Review

1) $(4x-8)+(x+16)$

$$\begin{array}{r} 4x-8 \\ +\ x+16 \\ \hline 5x+8 \end{array}$$

$-8+16=8$

Choice B

2) $(-2x^3+x)+(3x-6)$

$$\begin{array}{r} -2x^3+x \\ +\ \ 3x-6 \\ \hline -2x^3+4x-6 \end{array}$$

$x+3x=4x$

Choice D

3) $(x^2-10x)-(-5x^2+x)$

$$\begin{array}{r} x^2-10x \\ \div\ \div 5x^2+\cdots x \\ \hline \end{array}$$

Change subtraction to addition and change ALL signs in subtracted expression

$$\begin{array}{r} x^2-10x \\ +5x^2-x \\ \hline 6x^2-11x \end{array}$$

Choice D

4) $(-x+2)(x+3)$ Multiply

	$-x$	$+2$
x	$-x^2$	$2x$
$+3$	$-3x$	6

$2x+-3x=-x$

x^2-x+6

Choice A

5) $(x^2+1)(-x^3-4x+2)$ Multiply

	x^2	$+1$
$-x^3$	$-x^5$	$-x^3$
$-4x$	$-4x^3$	$-4x$
2	$2x^2$	2

$-x^3+-4x^3=-5x^3$

$-x^5-5x^3+2x^2-4x+2$

Choice B

6) Terms in $36x^3 | +27x^2 | -18x | -9$

- Terms are seperated by + or −

4 terms

Choice C

7) Factors in $11x^2 + 7x - 4$

- Multiply to get a product

11 and x^2 Choice A

7 and x

8) "Cost of 4 tickets, t, service charge 10

$4t + 10$

terms: $4t$ and 10

co-efficient: 4

Constant: 10

Choice D

9) Evaluate $-3\sqrt{20} - \sqrt{5}$

$\sqrt{20}$

$\sqrt{4} \cdot \sqrt{5}$

$2\sqrt{5}$

$-3(2\sqrt{5}) - \sqrt{5}$

$-6\sqrt{5} - \sqrt{5}$

$-7\sqrt{5}$

Radical is same so we can combine

Choice B

10) Product of $\sqrt{9}(\sqrt{3}+\sqrt{8})$

- Multiply underneath radical

$\sqrt{9}\cdot\sqrt{3} + \sqrt{9}\sqrt{8}$

$\sqrt{27}$ $\quad$ $\sqrt{27} + \sqrt{72}$

$\sqrt{9}\cdot\sqrt{3}$ $\quad$ $3\sqrt{3} + 6\sqrt{2}$

$3\sqrt{3}$ $\quad$ Choice D

$\sqrt{72}$

$\sqrt{36}\cdot\sqrt{2}$

$6\sqrt{2}$

Can't add because under radical is different

11) Multiply $5\sqrt{8}\cdot 7\sqrt{3}$ • Multiply outside & underneath

$5\cdot 7\cdot\sqrt{8}\cdot\sqrt{3}$

$35\sqrt{24}$

$35\cdot 2\sqrt{6}$

$70\sqrt{6}$

$\sqrt{24}$

$\sqrt{4}\cdot\sqrt{6}$

$2\sqrt{6}$

Choice B

12) $\sqrt{173}$ Area is 173 of Square Garden

• To find side length of square take square root of Area

173 is between perfect squares

169 and 196 Closer to 169

$\sqrt{169}$ $\quad$ $\sqrt{196}$

13 and 14 $\quad$ Choice D

13) Perimeter of triangle with sides
$15, 8\sqrt{7}, \sqrt{112}$

- Perimeter tells to add
- to add, radicals must match
- try to simplify $\sqrt{112}$ to ___ $\sqrt{7}$

$112 \div 7 = 16$

$\sqrt{112}$

$\sqrt{16} \cdot \sqrt{7}$

$4\sqrt{7}$

$15 + 8\sqrt{7} + 4\sqrt{7}$ $\quad 8+4=12$

$15 + 12\sqrt{7}$

Choice B

14) Irrational number

A) $49 \rightarrow$ Rational

B) $\sqrt{24} \rightarrow 2\sqrt{6} \rightarrow$ Irrational

C) $\sqrt{169} \rightarrow 13 \rightarrow$ Rational

D) $2.5 \rightarrow 2\frac{1}{2} \rightarrow$ Rational

Choice B

15) Natural #'s → 1, 2, 3, 4... Positive not 0
Whole #'s → 0, 1, 2, 3, 4..., Positive and 0
Rational # → Entire group of others make rational
Integer # → ...-3, -2, -1, 0, 1, 2, 3... Negative, 0, positive

If it is Natural, whole and Integer it will be a rational #

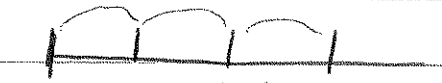
A) -13 Integer, not whole or natural
B) -9.5 Integer not whole
C) 57
D) $\sqrt{36}$ -6 or +6

Choice D

16) Rational + Rational = Rational
Because rationals can be written as fraction with whole #'s in numerator and denominator, if you add by finding common denominator you will still have a whole number denominator and whole # numerator

17) Irrational • Rational = Irrational
Because Irrational doesn't terminate or repeat then a product with a terminating or repeating will not cause the irrational to terminate or repeat

18) 459L to milliliters



459L ⟶ Multiply by 10 each Step you move down in Metric

Deci Centi Milli

$459 \times 10 \times 10 \times 10 = 459000$

19) $25 to dimes 10 dimes = $1

$$25\cancel{\$} \cdot \frac{10 \text{ (Dimes)}}{1\ \cancel{\$}} = 25 \cdot 10 = 250 \text{ dimes}$$

20) 10 weeks into minutes 60 min = 1 hr.
24 hr = 1 day
7 days = 1 week

$$10 \cancel{\text{ weeks}} \cdot \frac{7 \cancel{\text{ days}}}{1 \cancel{\text{ week}}} \cdot \frac{24 \cancel{\text{ hrs.}}}{1 \cancel{\text{ days}}} \cdot \frac{60 \text{ (min)}}{1 \cancel{\text{ hr.}}} = 10080$$