U1T Review

Name KEY

1. Convert: *Use your green sheet!*
43 miles to feet

$\frac{43 \text{ mi}}{1} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} = \boxed{227040 \text{ ft}}$

2. Convert: *Use your green sheet!*
620 inches to cm

$\frac{620 \text{ in}}{1} \cdot \frac{2.54 \text{ cm}}{1 \text{ in}} = \boxed{1574.8 \text{ cm}}$

3. Convert:
30 ft/sec to miles/hour

$\frac{30 \text{ ft}}{1 \text{ sec}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} = \boxed{20.45 \text{ mi/hr}}$

4. Convert: *Use your green sheet!*
How many seconds are there in a week?

$\frac{1 \text{ days}}{1} \cdot \frac{24 \text{ hr}}{1 \text{ day}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} \cdot \frac{60 \text{ sec}}{1 \text{ min}}$

$\boxed{604800 \text{ sec}}$

5. Write as an algebraic expression:
Quentin has x markers. Kellen, Garrett, and Ben then gave Quentin an additional y markers each. Write an expression to represent the number of markers Quentin has now.

$\boxed{x + 3y}$

6. Write as an algebraic expression:
Three times the difference of the cube of x and the square of y

$\boxed{3(x^3 - y^2)}$

7. Write as an algebraic expression:
Add 5 to the product of 8 and x, then divide by 2

$\boxed{\frac{8x+5}{2}}$

8. Identify the terms, coefficients, and constant $36x^3 + 27x^2 - 18x - 9$

Terms: 4 | Coefficients: 36, 27, -18 | Constant: -9

9. Suppose $5(3 - y) = 7x$. When $y = 10$, what is the value of x?

$5(3-10) = 7x$

$5(-7) = 7x$

$-35 = 7x$

$\boxed{x = -5}$

10. A rectangle has a length of 10 m and a width of 200 cm. What is the **perimeter** of the rectangle?
$P = 2L + 2W$

200 cm = 2 m.

10 m

$P = 2(10) + 2(2) = 20 + 4 = \boxed{24 \text{ m}}$

11. Simplify the expression, then determine how many terms are in the simplified expression.
$2(3 + x) + x(1 - 4x) + 5$

$6 + 2x + x - 4x^2 + 5$

$\boxed{-4x^2 + 3x + 11}$

$\boxed{3 \text{ terms}}$

12. Add the following polynomial.
$(5x^2 - 8x - 6) + (7x^2 - 9x - 3)$

$12x^2 - 17x - 9$

13. Subtract the following polynomial.
$(3x^2 + 5x - 9) + (6x^2 - 5x + 11)$

$-3x^2 + 2$

14. Multiply the following binomials.
$(x-6)(x+7)$

	x	-6
x	x^2	$-6x$
$+7$	$+7x$	-42

$x^2 + x - 42$

15. Multiply the following binomials.
$(x-4)^2$

	x	-4
x	x^2	$-4x$
-4	$-4x$	$+16$

$x^2 - 8x + 16$

16. Classify the following polynomial by number of terms and by degree:
$4x^3 + 3x^2 + 2x$

Name by terms: trinomial

Name by degree: Cubic

17. Sophia has 8 books in her locker. All the books are either personal books or school books. She has three times as many school books as personal books. How many schools books does Sophia have in her locker?

$8B = 3X$
$PB = X = 2$

$3X + X = 8$
$4X = 8$
$X = 2$

2 school books

18. Simplify $\sqrt{112}$

$\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 7}$
$2 \cdot 2\sqrt{7}$
$4\sqrt{7}$

19. Simplify $\sqrt{175}$

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

20. Simplify $-4\sqrt{3} - 3\sqrt{3}$

$-7\sqrt{3}$

21. Simplify $3\sqrt{6} + 2\sqrt{54}$

$9 < \frac{3}{3}$
$6 < \frac{2}{3}$

$3\sqrt{6} + 6\sqrt{6}$
$9\sqrt{6}$

$2\sqrt{3 \cdot 3 \cdot 2 \cdot 3}$
$2 \cdot 3\sqrt{2 \cdot 3}$
$6\sqrt{6}$

22. Simplify $3\sqrt{2} \cdot \sqrt{2}$

$3\sqrt{4} = 3 \cdot 2 = 6$

23. Simplify $5\sqrt{10}(3 + \sqrt{5})$

$25 < \frac{5}{5}$

$15\sqrt{10} + 5\sqrt{50}$
$15\sqrt{10} + 25\sqrt{2}$

$5\sqrt{5 \cdot 5 \cdot 2}$
$5 \cdot 5\sqrt{2}$
$25\sqrt{2}$

24. Label the following as rational or irrational:

R 30/6 I π R 8.14

25. Which measurement is more precise(exact)?
84 g or 2.51 mg