Algebra I Part II 61A name_____

1. Given the sets $A = \{3, 4, 5\}$, $B = \{2, 3, 4, 5, \ldots\}$, and $C = \{2, 3, 4\}$, tell which of the following statements are true and which are false.

   a) $A \subset B$ b) $C \not\subset B$ c) $A \not\subset C$ d) $C \subset B$

2. Tell whether each of the following statements is true or false:
   (a) {Wholes} $\subset$ {Naturals} (b) {Integers} $\subset$ {Rationals}

3. (a) $16\sqrt{5} \in$ {What subsets of the real numbers}? (b) $5\sqrt[3]{-27} \in$ {What subsets of the real numbers}?

4. (a) $\sqrt{7} + \sqrt[4]{81} \in$ {What subsets of the real numbers}? (b) $3\sqrt{64} - 2\sqrt{81} \in$ {What subsets of the real numbers}?

5. Given the sets $A = \{6, 7, 8\}$, $B = \{5, 6, 7, 8, \ldots\}$, and $C = \{5, 6, 7\}$, tell which of the following statements are true and which are false.

   a) $C \subset A$ b) $C \not\subset B$ c) $10 \in B$ d) $C \subset B$

6. Tell whether each of the following statements is true or false:
   (a) {Irrationals} $\subset$ {Rationals} (b) {Naturals} $\subset$ {Wholes}

7. (a) $-2\sqrt[3]{125} \in$ {What subsets of the real numbers}? (b) $16\sqrt{6} \in$ {What subsets of the real numbers}?

8. (a) $\frac{1}{2}\sqrt{49} + \sqrt[3]{-64} \in$ {What subsets of the real numbers}? (b) $\sqrt{7} - \sqrt{25} \in$ {What subsets of the real numbers}?

9. Given the sets $A = \{10, 11, 12\}$, $B = \{9, 10, 11, 12, \ldots\}$, and $C = \{9, 10, 11\}$, tell which of the following statements are true and which are false.

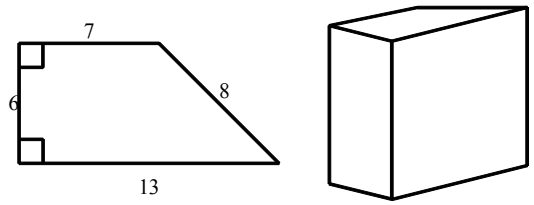
   a) $14 \in B$ b) $C \subset A$ c) $C \subset B$ d) $C \not\subset B$

10. Tell whether each of the following statements is true or false:
    (a) {Reals} $\subset$ {Integers} (b) {Irrationals} $\subset$ {Rationals}

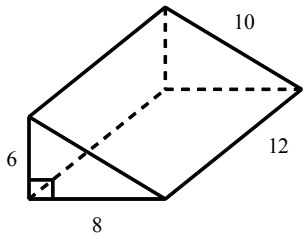
11. (a) $2\sqrt{7} \in$ {What subsets of the real numbers}? (b) $-2\sqrt[3]{8} \in$ {What subsets of the real numbers}?

12. (a) $\sqrt{3} - \sqrt{81} \in$ {What subsets of the real numbers}? (b) $3\sqrt[5]{32} - 2\sqrt{64} \in$ {What subsets of the real numbers}?

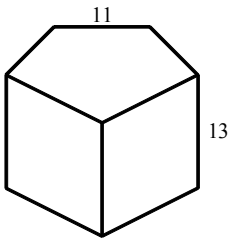
13. A base of a right prism whose height is 7 meters is the trapezoid shown. Find the surface area of the prism. Dimensions are in meters.



14. Find the volume and the total surface area of the right triangular prism. Dimensions are in inches.



15. Find the lateral surface area of this right prism whose bases are regular pentagons. Dimensions are in yards.



16. Solve the system by substitution:

$$3x + y = 10$$
$$-2x - 5y = 2$$

17. Solve the system by substitution:
$x - 5y = 15$
$2x + y = -3$

18. A ski club planned a trip to Park City, and 58 of the members signed up. If 80% of the members did not sign up, how many members does the club have?

19. During the sale, the price of the video camera was marked down 23 percent. The sale price of the video camera was $955. What was the original price of the video camera?

20. The experimental drug caused side effects in 14% of those who took it. If 910 experienced side effects, how many people took the experimental drug?

21. The cost of building a house increases 23 percent every year. If it costs $105,000 to build a house this year, what would it cost to build a house next year?

22. Add. Write the answer with all exponents positive. $x^{-1}y^2 + 3z^{-3}$

23. Add. Write the answer with all exponents positive. $x^{-1}y^2z^{-3} + w^2yz^{-1}$

Simplify:

24. $\dfrac{f+g}{\dfrac{1}{h}}$

25. $\dfrac{\dfrac{j}{s}}{\dfrac{t}{s+j}}$