

Name _____

Date _____

Day 1 – The Counting Principle, Subsets, and Logic

(A) Describe each set and (B) Write down two more elements in each set.

1. {Asia, Africa, Europe, ...} set of continents; North America, South America
2. {2, 4, 6, 8, ...} set of even numbers; 10, 12
3. {Sunday, Monday, Tuesday, ...} set of weekdays; Wednesday, Thursday
4. {1, 4, 9, 16, ...} set of perfect squares; 25, 36

Set A = {whole numbers between 60 and 90}

5. List the subset B {multiples of 5} {60, 65, 70, 75, 80, 85, 90}
6. List the subset C {multiples of 3} {60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90}
7. List the subset D {perfect squares} {64, 81}
8. List the elements that are in both subsets B and C. {60, 75, 90}

State whether each of the following statements is true or false.

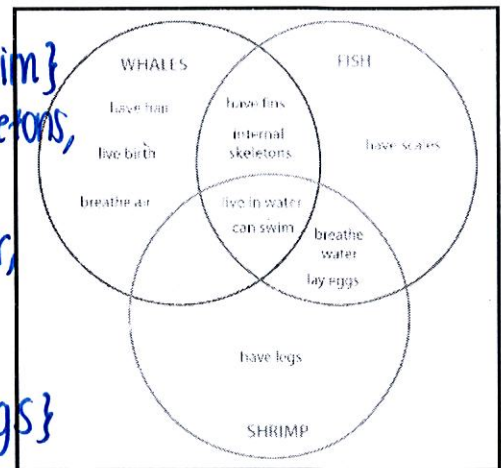
9. {Algeria, Mozambique} \subset {Countries in Africa} true
10. {mango, banana} \subset {fruit} true
11. {volleyball, basketball, football, golf} \subset {team sports} false
12. {potatoes} \subset {carrots} false

13. Subset W = {have hair, live birth, breathe air, have fins, internal skeletons, lives in water, can swim}

14. Subset F = {have scales, have fins, internal skeletons, live in water, can swim, breathe water, lay eggs}

15. Subset S = {have legs, lay eggs, breathe water, live in water, can swim}

16. What elements are in subsets F and S? {live in water, can swim, breathe water, lay eggs}



17. What elements are common to all 3 subsets?

{live in water, can swim}

18. Subset {can swim} = {fish, sharks, whales, jellyfish, shrimp, dogs, ducks, humans, sea turtles}

19. Subset {have fins} = {fish, sharks, whales}

20. Subset {breath air} = {chimpanzees, spiders, chickadees, dogs, ducks, humans, sea turtles}

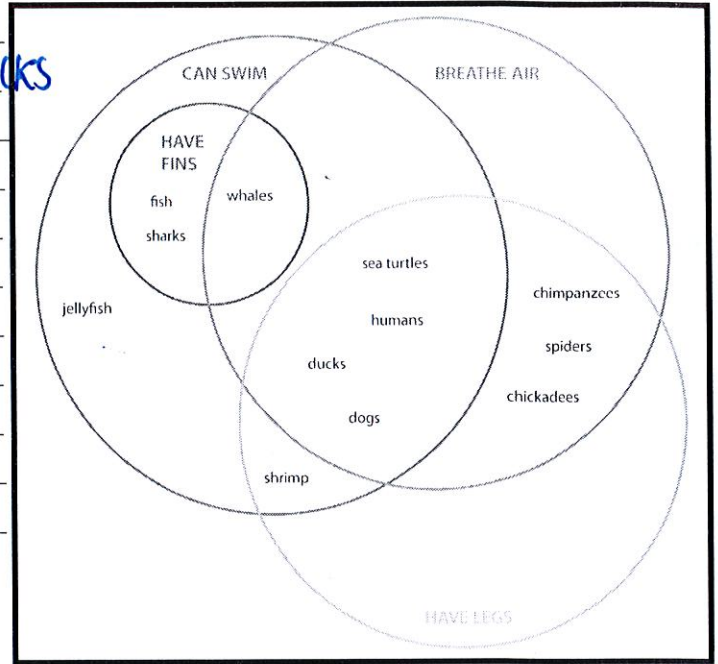
21. Is {can swim} \subset {have fins}? NO

22. Is {have fins} \subset {can swim}? YES

23. Is {have fins} \subset {breath air}? NO

24. What animals are in both {can swim} and {breath air}? sea turtles, humans, ducks, dogs, whales

25. What animals are in {can swim} or {breath air}? Jellyfish, fish, sharks, whales, sea turtles, humans, ducks, dogs, shrimp, chimpanzees, spiders, chickadees.

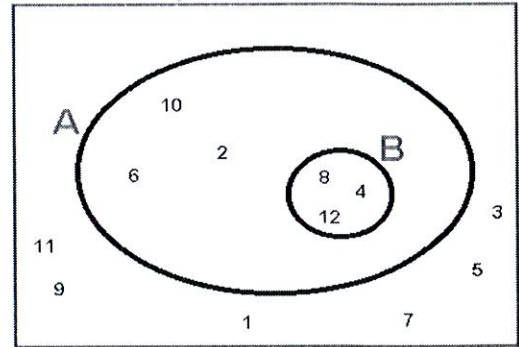


26. List the elements of subset {A}. {2, 4, 6, 8, 10, 12}

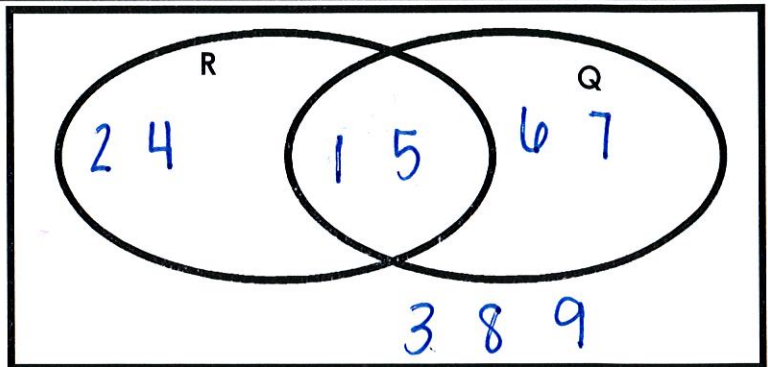
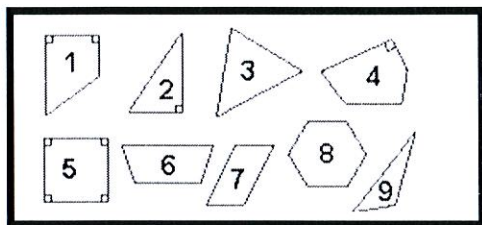
27. List the elements of subset {B}. {4, 8, 12}

28. Is {A} \subset {B}? NO

29. Is {B} \subset {A}? YES



30. Complete the Venn diagram.



Set R contains shapes with a right angle (90°).
Set Q contains shapes with four sides.