Name: _____
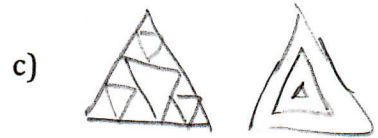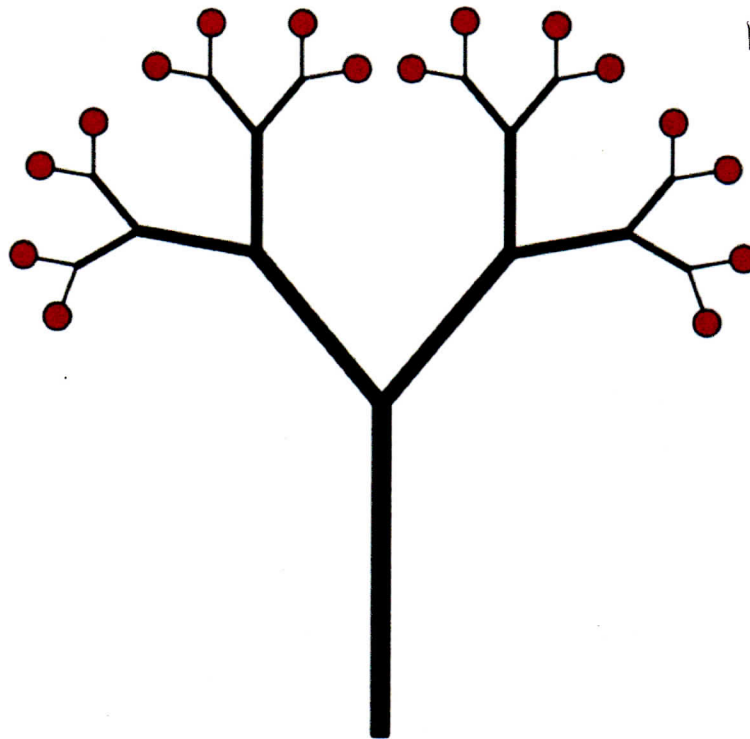
Fraction Tree

1. Write one sentence that describes what a fractal is. Include some of the following:
- repeated or neverending patterns that get bigger + bigger or smaller + smaller
- a simple pattern, that, when repeated over + over again, makes something complicated
- pattern made up of lots of different sized copies of itself

2. What are four types of fractal patterns that you learned about?

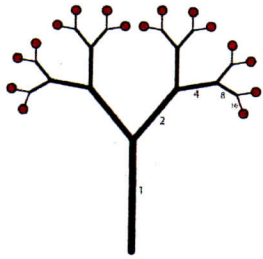a) branching   b) spiral   c) geometric   d) algebraic

3. Draw an example of three types of fractal patterns.

a)   b)   c)

4. How do the branches multiply (by what number) in the tree below?

They multiply by 2.

1

Name: _____

Fraction Tree

5. a. How many apples are there total in the tree to the right? **16**

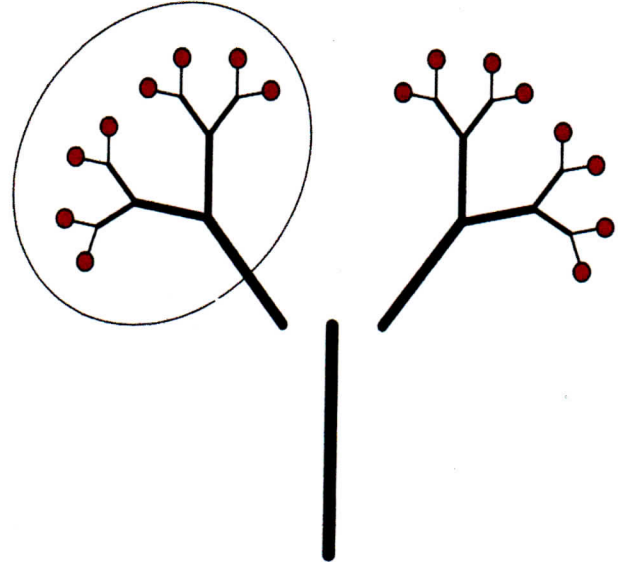b. How many apples are in the circled half of the tree to the right? **8**

6. What are two different numerical expressions for **half** that can be used to describe the picture to the right? **8/16   1/2**

extra points for a third numerical expression of half (hint: what if you are only working with 8 apples?): **4/8**

7. a. How many apples are there total in the tree to the right? **16**

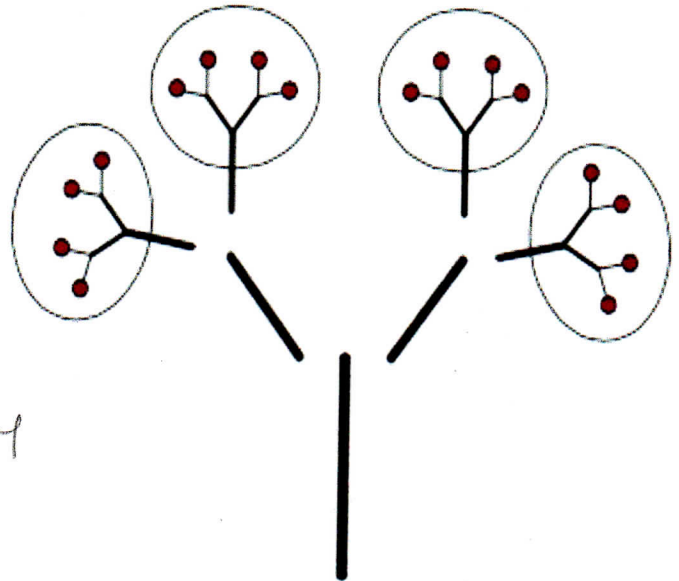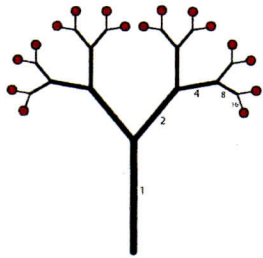b. How many apples are in each circle in the tree to the right? **2**

8. What are two different numerical expressions for a **quarter or one fourth** that can be used to describe the picture to the right? **4/16   1/4**

extra points for a third numerical expression for a quarter (hint: what if you were only working with 8 apples?): **2/8**

Name: _____

Fraction Tree

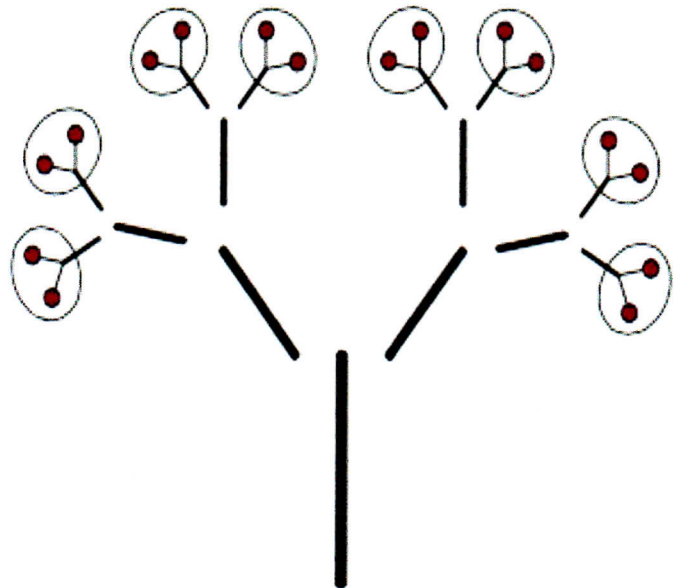9. a. How many apples are there in the tree to the right? 16

b. How many apples are in each circle? 2

10. What are two different numerical expressions for a **one eighth** that can be used to describe the picture to the right?

$2/16$ $1/8$

11. What fraction of the tree includes four apples? Start with: how many apples are there total?

4/ 16 = 2 /8 = 1 /4

What are you doing in each step above? dividing by 4

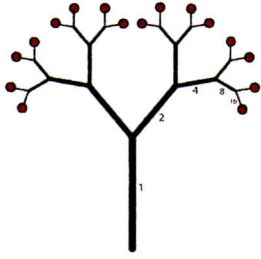12. What fraction of the tree includes 12 apples?

12/ 16 = 6 /8 = 3 /4

What are you doing in each step above? dividing by 2

13. What fraction of the tree includes 10 apples?

10/ 16 = 5 /8

What math did you just do to get to your answer? divide by 2

Name: _____

Fraction Tree

14. How many apples are there in one quarter (1/4) plus one eighth (1/8) of the tree?
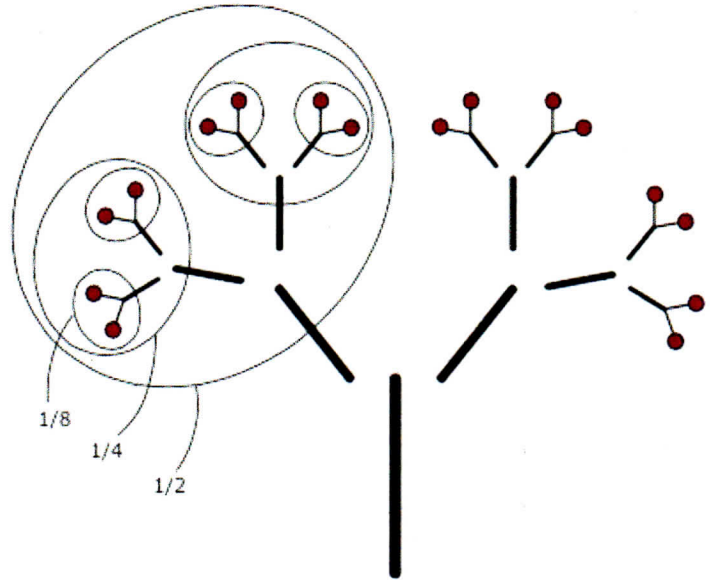
1/4 + 1/8 = __4__ /16 + __2__ /16 = __6__ /16   __6__ apples

15. How many apples are there in half (1/2) plus a quarter (1/4) of the tree?

1/2 + 1/4 = __8__ /16 + __4__ /16 =

__12__ /16   __12__ apples

16. How many apples are there in one half (1/2) plus one eighth (1/8) of the tree?

1/2 + 1/8 = __8__ /16 + __2__ /16 =

__10__ /16   __10__ apples

1/8

1/4

1/2

17. On the number line below, mark an "A" halfway between 0 and 16/16. (1/2 = __8__ /16)

Mark "B" at ten sixteenths (10/16). Mark "C" at five sixteenths (5/16).

Mark "D" at a quarter. (1/4 = __4__ /16)   Mark "E" at one eighth. (1/8 = __2__ /16)

Mark "F" at three eighths. (3/8 = __6__ /16)   Mark "G" at fifteen sixteenths (15/16).

Mark "H" at three fourths. (3/4 = __12__ /16)   Mark "I" at 1. (1 = __16__ /16)

```
        E       D  C  F        A        B        H           G  I
    ┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬───┬
   0/16   2/16   4/16   6/16   8/16   10/16   12/16   14/16   16/16
```