

## Toothfish Math Answer Key

The Patagonian toothfish lives in the deep cold waters of the Antarctic Ocean. It swims at a depth of 1,600 to 3,200 feet. Remember that a mile is 5,280 feet.

1. Express the upper limit of the Patagonian toothfish's range as a fraction of a mile and reduce it. Which of the following fractions is closest to it?  
c.  $\frac{1}{3}$
2. Express the upper limit of the Patagonian toothfish's range as a fraction of a mile and reduce it. Which of the following fractions is closest to it?  
c.  $\frac{2}{3}$

In the year 2000, fishermen legally caught 16,000 tons of Patagonian toothfish. It is estimated that the tonnage caught illegally was 2-5 times that amount. The average retail price of the Patagonian toothfish was \$12 per pound.

3. What is the smallest number of tons that were probably caught illegally in 2000?  
32,000 tons
4. How many pounds is that? 64,000,000 pounds
5. What is the largest number of tons that were probably caught illegally in 2000?  
80,000 tons
6. How many pounds is that? 160,000,000 pounds
7. How many pounds was the legal catch of Patagonian toothfish in 2000?  
32,000,000 pounds
8. How much was the legal catch of Patagonian toothfish worth? \$384,000,000
9. How much was the illegal catch of Patagonian toothfish worth?  
\$768,000,000 – \$1,920,000,000 or \$768 million to \$1,920 million

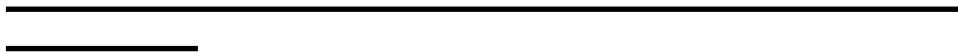
## Toothfish Math (continued)

The Patagonian toothfish is a slow-growing fish. They can live as long as 45-50 years and reach a maximum size of about 6 feet and as much as 250 pounds, or about the size of a football linebacker! When they first became popular, most of the fish that were caught averaged 100 pounds. By 2002, the average Patagonian toothfish caught weighed only 20 pounds.

10. Write a ratio showing the relationship between the average size of the Patagonian toothfish before 1990 and the average size of the Patagonian toothfish in 2002.

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11. Draw a line representing the size of the average fish caught before 1990. Draw a line below it, in proportion, representing the size of the average fish caught in 2002.



The line representing the average-sized toothfish caught before 1990 should be five times as long as the line representing the average-sized toothfish caught in 2002.

12. Why might the Patagonian toothfish be getting smaller?  
Fewer and fewer toothfish are able to live out their natural lifespan and grow to their full length.