**Lower Elementary:**



*Question:* A baby saltwater crocodile hatches from its egg with black stripes. After 48 months, the stripes disappear. How many years old is the crocodile when it loses its stripes?

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\platypus.pngUpper Elementary:**

*Question:* A platypus eats 1/4 of a kilogram of worms each day. If a platypus has eaten 75 grams of worms, what fractional part of its daily worm intake has it consumed?

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\kangaroo.png**

**Middle School:**

*Question:* When a baby kangaroo is born, it’s only 2 centimetres long from snout to tail. An adult kangaroo is 21/2 metres long. What percentage of the adult kangaroo’s length is the baby kangaroo?

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\koala.pngAlgebra and Up:**

*Question:* Koalas have very small brains. An adult koala that weighs 10 kilograms has a brain that weighs 21 grams. A typical human brain-to-body weight ratio is 1:40. What is the koala’s brain-to-body weight ratio? How does the koala’s brain-to-body ratio compare to the human’s as a fraction?

**Lower Elementary:**

*Question:* A baby saltwater crocodile hatches from its egg with black stripes. After 48 months, the stripes disappear. How many years old is the crocodile when it loses its stripes?

*Answer:* 4 years

*Solution:* There are 12 months in a year. Since 12 + 12 + 12 + 12 = 48, the crocodile is 4 years old when it loses its stripes.

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\platypus.pngUpper Elementary:**

*Question:* A platypus eats 1/4 of a kilogram of worms each day. If a platypus has eaten 75 grams of worms, what fractional part of its daily worm intake has it consumed?

*Answer:* 1/3

*Solution:* There are 1000 grams in a kilogram. Since the platypus eats 1/4 of a kilogram of worms each day, that means it eats 1/4 of 1000 grams = 250 grams of worms each day. If the platypus has eaten 85 grams so far, it has eaten 1/4 of its daily intake of worms because 75 is 1/3 of 250.

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\kangaroo.png**

**Middle School:**

*Question:* When a baby kangaroo is born, it’s only 2 centimetres long from snout to tail. An adult kangaroo is 21/4 metres long. What percentage of the adult kangaroo’s length is the baby kangaroo?

*Answer:* 4/5%

*Solution:* Before we solve this problem, we need to know that there are 100 centimetres in a metre, so the adult kangaroo is 250 centimetres long. One way to solve this problem is to set up a proportion. As a fraction, the baby kangaroo’s length is 2/250 of the length of the adult kangaroo. To turn this fraction into a percentage, we can find an equivalent fraction out of 100 because percent means “for each hundred.” Since 100 is 2/5 of 250, we can multiply both the numerator and the denominator by 2/5 to get our percentage: the baby kangaroo is 4/5% the length of the adult kangaroo.

**C:\Users\jane.adams\AppData\Local\Microsoft\Windows\INetCache\Content.Word\koala.pngAlgebra and Up:**

*Question:* Koalas have very small brains. An adult koala that weighs 10 kilograms has a brain that weighs 21 grams. A typical human brain-to-body weight ratio is 1:40. What is the koala’s brain-to-body weight ratio? How does the koala’s brain-to-body ratio compare to the human’s as a fraction?

*Answer:* The koala’s brain-to-body weight ratio is 85:40 000, which is 17/200 of a human’s brain-to-body weight ratio.

*Solution:* The koala weighs 10 × 1000 = 10 000 grams, so its brain-to-body weight ratio is 211/4:10 000 = 85:40 000. We can rewrite ratios as fractions, so to solve this problem, we need to find what fractional part 85/40 000 is of 1/40. To do this, we can solve 1/40***x*** = 85/40 000 and find that ***x*** = 17/200. So, the koala’s brain-to-body weight ratio is 17/200 of a human’s brain-to-body weight ratio.