The Tortoise and the Hare
Task 1.6

In the children's story of the tortoise and the hare, the hare mocks the tortoise for being slow. The tortoise replies, "Slow and steady wins the race." The hare says, "We'll just see about that", and challenges the tortoise to a race. The distance from the starting line of the hare is given by the function: $d = t^2$ (d in meters and t in seconds).

Because the hare is so confident that he can beat the tortoise, he gives the tortoise a 1 meter head start. The distance from the starting line of the tortoise including the head start is given by the function: $d = 2^t$ (d in meters and t in seconds).

Fill in the table below and use it to answer the following question.

Time (t)	Tortoise Distance $d = 2^t$	Hare Distance $d = t^2$
1		
2		
3		
4		
5		
6		

1. By looking at the table, at what time are they tied?

Some questions cannot be answered easily by looking at the table. For example:

2. If the race course is very long, who wins: the tortoise or the hare? How do you know?

3. If the race were 15 meters long, who wins, the tortoise or the hare? How do you know?

A good strategy for answering questions 2 & 3 would be _____.

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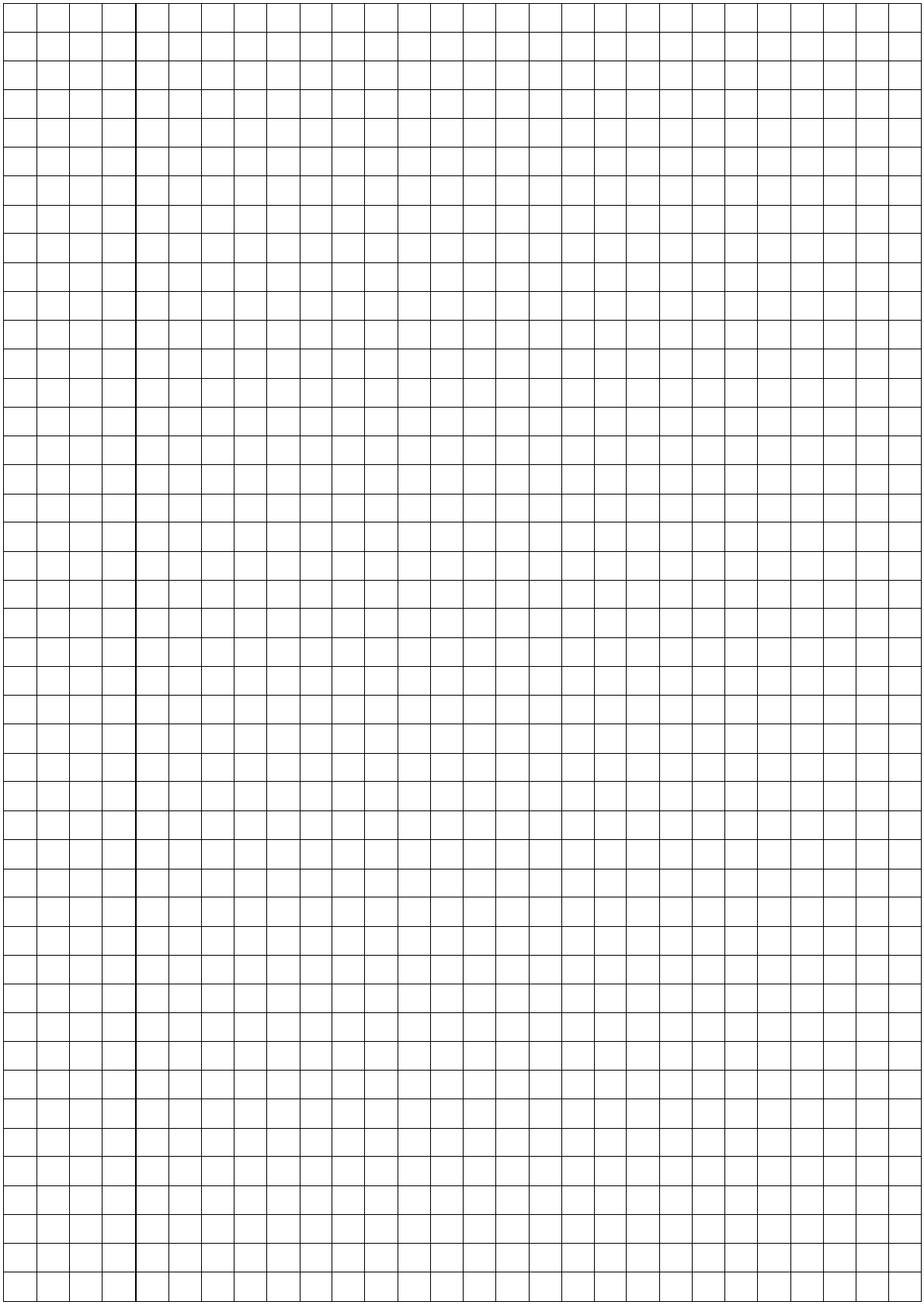

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4. Fill in the table below to find and compare the speeds of the tortoise and the hare in the following intervals.

Interval	Tortoise Average Speed $d = 2^t$	Hare Average Speed $d = t^2$	Who is Going Faster?
[0, 2)			
[2, 4)			
[4, 10)			
[10, ∞)			