More practice on Acceleration (look at the unit carefully)

Use the following equations to answer the questions:

$$\text{acceleration} = \frac{\text{change in speed}}{\text{time}} \qquad \text{change in speed} = \text{end speed} - \text{start speed}$$

1. A car accelerates from 20 km/h to 70 km/h in 15 seconds. What is the acceleration?

2. A plane goes from 150 m/s to 300 m/s in 50 seconds. What is the acceleration?

3. A bus increases its speed from 10 m/s to 25 m/s in 8 seconds. What is the acceleration?

4. A cyclist goes from 10 km/h to 30 km/h in 12 seconds. What is the acceleration?

5. A motorcycle accelerates from 0 to 100 km/h in 5 seconds. What is the acceleration?

6. A car decelerates from 40 m/s to 10 m/s in 4 seconds. What is the acceleration?

7. A rocket speeds up from 0 to 1000 m/s in 25 seconds. What is the acceleration?

8. A boat decreases its speed from 15 m/s to 5 m/s in 10 seconds. What is the acceleration?

9. A runner accelerates from 3 m/s to 9 m/s in 6 seconds. What is the acceleration?

10. A truck increases its speed from 60 km/h to 120 km/h in 15 seconds. What is the acceleration?

11. A ball is kicked and reaches a speed of 25 m/s in 2 seconds. What is the acceleration?

12. A train slows down from 80 km/h to 40 km/h in 10 seconds. What is the acceleration?

13. A roller coaster increases its speed from 10 m/s to 35 m/s in 12 seconds. What is the acceleration?

14. A car slows down from 100 m/s to 50 m/s in 10 seconds. What is the acceleration?

15. A swimmer increases their speed from 1 m/s to 3 m/s in 5 seconds. What is the acceleration?

Answers

1. $a = 0.93\,\mathrm{m/s^2}$
2. $a = 3\,\mathrm{m/s^2}$
3. $a = 1.875\,\mathrm{m/s^2}$
4. $a = 0.46\,\mathrm{m/s^2}$
5. $a = 5.56\,\mathrm{m/s^2}$
6. $a = -7.5\,\mathrm{m/s^2}$
7. $a = 40\,\mathrm{m/s^2}$
8. $a = -1\,\mathrm{m/s^2}$
9. $a = 1\,\mathrm{m/s^2}$
10. $a = 1.11\,\mathrm{m/s^2}$
11. $a = 12.5\,\mathrm{m/s^2}$
12. $a = -1.11\,\mathrm{m/s^2}$
13. $a = 2.08\,\mathrm{m/s^2}$
14. $a = -5\,\mathrm{m/s^2}$
15. $a = 0.4\,\mathrm{m/s^2}$