# Acceleration Practice

1 Is it accelerating? How did you decide?

(a) A cat running North at a steady speed.

(b) An aeroplane just after it lands.

(c) A cyclist turning a corner.

(d) A cow standing in a field.

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2 A train speeds up after passing a signal. The speeds are in the table below, but one is missing.

| **Time** (**s**) | 0 | 5 | 10 | 15 | 20 |
|---|---|---|---|---|---|
| **Speed** (**m/s**) | 5 | 11 | 17 | | 29 |

(a) Is it accelerating? How can you tell?

(b) What is the missing speed?

(c) If it keeps accelerating like this, when will the speed be 65 m/s?

(d) What is the acceleration in $m/s^2$?

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3 A bus slows down as it approaches a bus stop.

| **Time** (**s**) | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| **Speed** (**m/s**) | 12 | 9 | | 3 |

(a) Is the bus accelerating? How can you tell?

(b) What is the missing speed?

(c) If it keeps decelerating like this, when will it stop?

(d) How much does the speed change each second?

4 Complete the word equations.

(a) Acceleration $=$

(b) Velocity change $=$

(c) Time taken $=$

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5 A minibus starts at rest and accelerates at $1.5$ m/s$^2$.

(a) How fast will it be going after $6$ s?

(b) How much time does it take to reach $15$ m/s?

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6 A cheetah sighting prey starts at $6$ m/s and accelerates to $26$ m/s in $4$ s.

(a) How much speed does it gain each second?

(b) What is its acceleration in m/s$^2$?

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7 A motorcycle starts at rest and accelerates at $6$ m/s$^2$.

(a) How fast will it be going after $4$ s?

(b) How much time does it take to reach $30$ m/s?

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8 A red car goes from $0 - 24$ m/s in $4$ s.
A blue car goes from $0 - 35$ m/s in $5$ s.

(a) Calculate the acceleration of the red car.

(b) Calculate the acceleration of the blue car.

(c) Which car has the greater acceleration?