

### Question 1

$$xy > 0$$

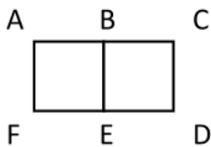
**Quantity A**   **Quantity B**

$$x^2y^4$$

$$x^3y^6$$

- A** | Quantity A is greater.
- B** | Quantity B is greater.
- C** | The two quantities are equal.
- D** | The relationship cannot be determined from the information given.

### Question 2



Note: Not drawn to scale

In the figure shown above, line segment BC has length 16 cm, rectangle FABE is a square, and the area of rectangular region FACD is  $612 \text{ cm}^2$ .

**Quantity A**   **Quantity B**

Area of FABE   Area of EBCD

**A** | Quantity A is greater.

**B** | Quantity B is greater.

**C** | The two quantities are equal.

**D** | The relationship cannot be determined from the information given.

### Question 3

Working independently, Machine A can complete a work in 3.5 hours, while Machine B can complete the same work in  $x$  hours. Working simultaneously, they together complete the same work in 1.5 hours.

**Quantity A**   **Quantity B**

3

$x$

**A** | Quantity A is greater.

**B** | Quantity B is greater.

**C** | The two quantities are equal.

**D** | The relationship cannot be determined from the information given.

## Question 4

A driver completed the first 20 miles of a 40-mile trip at an average speed of 50 miles per hour and the second 20 miles at an average speed of  $x$  miles per hour. The average speed for the entire 40-mile trip was 60 miles per hour. (Assume that the driver did not make any stops during the 40-mile trip.)

**Quantity A**      **Quantity B**

$x - 60$       10

- A Quantity A is greater.
- B Quantity B is greater.
- C The two quantities are equal.
- D The relationship cannot be determined from the information given.

## Question 5

A positive integer  $x$  is a perfect number if the sum of all the factors of  $x$ , including 1 and  $x$ , is equal to  $2x$ .

**Quantity A**

**Quantity B**

The sum of the reciprocals of all the factors of the perfect number 28      2

- A Quantity A is greater.
- B Quantity B is greater.
- C The two quantities are equal.
- D The relationship cannot be determined from the information given.