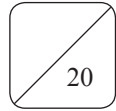


Revision Test 1

Duration: 40 minutes



1. It is given that $576 = 2^6 \times 3^2$.
- (a) Evaluate $\sqrt{576}$.
 - (b) It is given that $576n$ is a cube number.
 - (i) Find the least possible integer of n .
 - (ii) Using your answer in (b)(i), find the value of $\sqrt[3]{576n}$.

Answer (a) _____ [1]

(b)(i) $n =$ _____ [2]

(ii) _____ [2]

-
2. The cost of printing had decreased in the ratio 4 : 5 from 2014 to 2015.
- (a) By what percentage had the cost of printing decreased?
 - (b) If the printing cost decreases by 0.5 cent per copy in 2015, how much was the cost of printing 15 000 copies in 2015?

Answer (a) _____% [1]

(b) \$ _____ [3]

3. A boy cycled 2.16 km at an average speed of 3.6 km/h. If he cycled the first part of the journey at an average speed of 4.0 km/h for 24 minutes, find
- (a) the total time taken, in minutes, for the whole journey,
 - (b) his average speed, in km/h, for the second part of the journey.

Answer (a) _____ minutes [1]

(b) _____ km/h [3]

4. Simplify each of the following algebraic fractions.

(a) $x + \frac{3x}{5}$

(b) $\frac{2y + z}{3} - \frac{5(2z - 3y)}{4}$

Answer (a) _____ [1]

(b) _____ [2]

5. 5 shirts and 3 pairs of trousers cost $\$x$ and $\$4y$ respectively. Jane bought 9 shirts and 5 pairs of trousers and she left $\$12$.
- (a) Write down an algebraic expression for
- (i) the cost of a shirt,
 - (ii) the cost of a pair of trousers.
- (b) Express, in terms of x and y , the total amount of money Jane had at first.
- (c) Hence, if $x = 12$ and $y = 15$, how much money did Jane have at first?

Answer (a)(i) \$ _____ [1]

(ii) \$ _____ [1]

(b) \$ _____ [1]

(c) \$ _____ [1]

–End–

Solutions to Revision Test 1

1. (a) $576 = 2^6 \times 3^2$
 $\sqrt{576} = \sqrt{(2^3 \times 3)^2}$
 $= 2^3 \times 3$
 $= 24$ [1]
- (b) (i) $576n = 2^6 \times 3^2 \times n$
 The least possible integer of n occurs when
 $2^6 \times 3^2 \times n = 2^6 \times 3^3$ [1]
 $2^6 \times 3^2 \times n = 2^6 \times 3^2 \times 3$ [1]
 Least possible integer of $n = 3$ [1]
- (ii) $\sqrt[3]{576n} = \sqrt[3]{2^6 \times 3^2 \times 3}$ [1]
 $= \sqrt[3]{(2^2 \times 3)^3}$
 $= 2^2 \times 3$
 $= 12$ [1]
2. (a) % decrease $= \frac{1}{5} \times 100\%$
 $= 20\%$ [1]
- (b) Decrease of 20% \rightarrow 0.5 cent
 Cost per copy in 2015 $= \frac{80}{20} \times 0.5$ cent
 $= 2$ cents [1]
 Total cost of 15 000 copies
 $= 15\,000 \times 2$ cents [1]
 $= 15\,000 \times \$0.02$
 $= \$300$ [1]
3. (a) Total time taken $= \frac{2.16}{3.6} \times 60$ minutes
 $= 36$ minutes [1]
- (b) Distance for the 1st part $= 4.0 \times \frac{24}{60}$
 $= 1.6$ km
 Distance for the 2nd part $= 2.16 - 1.6$
 $= 0.56$ km [1]
 Time taken for the 2nd part $= \frac{36 - 24}{60}$
 $= 0.2$ hour [1]
 Average speed for the 2nd part
 $= \frac{0.56}{0.2}$
 $= 2.8$ km/h [1]
4. (a) $x + \frac{3x}{5} = \frac{5x + 3x}{5}$
 $= \frac{8x}{5}$ [1]
- (b) $\frac{2y + z}{3} - \frac{5(2z - 3y)}{4}$
 $= \frac{4(2y + z) - 15(2z - 3y)}{12}$ [1]
 $= \frac{8y + 4z - 30z + 45y}{12}$
 $= \frac{53y - 26z}{12}$ [1]
5. (a) (i) Cost of a shirt $= \$\frac{x}{5}$ [1]
 (ii) Cost of a pair of trousers $= \$\frac{4y}{3}$ [1]
- (b) Total $= \$(9 \times \frac{x}{5} + 5 \times \frac{4y}{3} + 12)$
 $= \$(\frac{9x}{5} + \frac{20y}{3} + 12)$ [1]
- (c) When $x = 12$ and $y = 15$,
 Total $= \$(\frac{9(12)}{5} + \frac{20(15)}{3} + 12)$
 $= \$133.60$ [1]