

- Instructions**
- Attempt all questions
 - Calculators may be used

YEAR 8

Time allowed: 1 hour

Total marks = 100

- 1** $\frac{6}{50}$ is equivalent to
- (A) 3% (B) 6% (C) $8\frac{1}{3}\%$ (D) 12%
- 2** If $x - 10 = -2$ then x equals
- (A) -12 (B) -8 (C) 8 (D) 12
- 3** $\frac{36}{2 \times 3}$ is equal to
- (A) 6 (B) 18 (C) 54 (D) 36
- 4** In a group of 35 children the ratio of boys to girls is 5:2. How many children are girls?
- (A) 14 (B) 10 (C) 21 (D) 25
- 5** Which of the following is equal to $3a^3 \times a^2$?
- (A) $3a^5$ (B) $3a^6$ (C) $4a^5$ (D) $4a^6$
- 6** Convert 1.4 square metres to square centimetres.
- (A) 14 (B) 140 (C) 1400 (D) 14 000
- 7** $1 + \frac{7}{100} + \frac{3}{1000} =$
- (A) 1.73 (B) 0.173 (C) 1.073 (D) 1.0703
- 8** A rectangle has perimeter 20 cm and area 21 cm². What are its dimensions in cm.
- (A) 1 and 20 (B) 4 and 6 (C) 9 and 2 (D) 3 and 7
- 9** $\frac{18t^4}{9t} =$
- (A) $9t^3$ (B) $9t^4$ (C) $2t^3$ (D) $2t^4$
- 10** $3(2x - 5) - 2(4 - x)$ simplifies to
- (A) $8x - 23$ (B) $7x - 13$ (C) $5x - 13$ (D) $4x - 2$

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- 11** 17% of \$50 is
(A) \$8.50 (B) \$17.00 (C) \$34.00 (D) \$85.00
- 12** $(-3)^2 + (-2)^3$ equals
(A) -17 (B) -12 (C) 1 (D) 17
- 13** The correct factorisation of $4a^2 + 12ab^2$ is
(A) $4a(1 + 3b)^2$ (B) $4ab(a + 3b)$ (C) $4a(a + 12b^2)$ (D) $4a(a + 3b^2)$
- 14** If 120 is 20% of a number, then the number is
(A) 24 (B) 96 (C) 480 (D) 600
- 15** The cost price of a watch is \$200 and the selling price is \$250. The profit expressed as a percentage of the cost price is
(A) 20% (B) 25% (C) 80% (D) 125%

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Total marks achieved for PART A

30

Answers only required in PART B

Questions	Answers
Evaluate:	
1 $31.2 \times (14.6 - 8.1)$ correct to 2 decimal places.	
2 $(2.5)^3$	
3 $6\frac{3}{5} \div 5$	
4 Find 18% of \$652	
Simplify the following:	
5 $(-7)^2$	
6 $30:48$	
7 $(5a^3)^3$	
8 $m - \frac{m}{5}$	
9 $-6a - 2b + 5a$	
10 $\sqrt{a} \times \sqrt{a}$	
11 $\frac{8y + 24}{8}$	
12 $\frac{t^5}{4t^5}$	
13 $\frac{x}{9} \div x$	
14 $\sqrt[3]{x^{36}}$	
15 Find the value (correct to 2 decimal places) of $a^2\sqrt{b}$ when $a = 8$ and $b = 5$.	

Total marks achieved for PART B

Show all necessary working in PART C.

Marks

1 Simplify the following.

a $2a + 7a \times 3 - 4a$ _____

b $7a \times 3xy + 5 \times 6yx$ _____

c $\frac{4m \times 5n}{6 \times m}$ _____

d $(3x^3y^2)^5$ _____

e $(8y^4x^5z) \div (4x^2y^2)$ _____

10

2 a Find $75\frac{1}{2}\%$ of \$952 _____

b Increase \$900 by 20% _____

A greengrocer bought 200 kg of oranges for \$150 and sold them for \$1.35 per kg. Find:

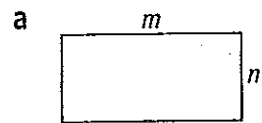
c his profit _____

d his percentage profit on the cost price _____

e Find 8% of \$240 _____

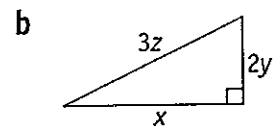
10

3 Write an expression to describe the perimeter and area of each shape.



Perimeter = _____

Area = _____



Perimeter = _____

Area = _____

c Goods costing \$C have a selling price of \$S. Write a formula for the profit \$P.

10

4 Simplify the following algebraic fractions.

a $\frac{3x}{5} + \frac{x}{5}$ _____

b $\frac{2m}{6} - \frac{m}{3}$ _____

c $\frac{3a}{5} \times \frac{a}{6}$ _____

d $\frac{8m}{7} \div \frac{5}{m}$ _____

e $(2x^2y)^3 \div 6xy$ _____

10

Total marks achieved for PART C

40

Answers

PAGES 129 & 130 1 D 2 C 3 A 4 B 5 A 6 D 7 C 8 D 9 C 10 A 11 A 12 C 13 D 14 D 15 B

PAGE 131 1 202.80 2 15.625 3 $1\frac{8}{25}$ 4 \$117.36 5 49 6 5:8 7 $125a^9$ 8 $\frac{4m}{5}$ 9 $-a-2b$ 10 a 11 $y+3$

12 $\frac{1}{4}$ 13 $\frac{1}{9}$ 14 x^{12} 15 143.11

PAGE 132 1 a $19a$ b $21axy+30xy$ c $\frac{10n}{3}$ d $243x^{15}y^{20}$ e $2x^3y^2z$ 2 a \$718.76 b \$1080 c \$120 d 80% e \$1

3 a $2m+2n; mn$ b $x+2y+3z; xy$ c $P=S-C$ 4 a $\frac{4x}{5}$ b 0 c $\frac{a^2}{10}$ d $\frac{8m^2}{35}$ e $\frac{4}{3}x^5y^2$