

# Answer Key

## COVERS TOPICS TAUGHT IN GRADE 7

### Section A

(10 × 1 marks)

1. (1)    2. (4)    3. (1)    4. (3)    5. (3)  
6. (2)    7. (2)    8. (4)    9. (4)    10. (4)

(5 × 2 marks)

11. (3)    12. (4)    13. (2)    14. (3)    15. (4)

### Section B

(10 × 1 marks)

16. 614.6  
17. B  
18. 8%  
19. 5000  
20. 45 000  
21. 90 cm  
22. 34  
23. R(10p + 8)    OR    R(8 + 10p)  
24.  $16\frac{1}{4}$     OR    16.25  
25. R9.65

(5 × 2 marks)

*Correct method and correct answer: M1, A1*  
*Correct answer with no working: A2*  
*Correct method and wrong answer: M1, A0*  
*Incorrect method but correct answer (fluke): M0, A0*

26.  $\angle a = 180^\circ - 105^\circ = 75^\circ$  (M1, A1)  
27. Area of circle =  $\pi r^2$   
 $= \frac{22}{7} \times 7 \text{ cm} \times 7 \text{ cm}$   
 $= 154 \text{ cm}^2$  (M1, A1)  
28. Cost of 1 black and 1 pink wallet:  
 $R17 + R9 = R26$  (M1)  
Number of black wallets:  
 $R520 \div R26 = 20$  (A1)  
29. Weekly savings:  $\frac{20}{100} \times R25$   
 $= R5$  (M1)  
8 weeks' savings:  $R5 \times 8$   
 $= R40$  (A1)  
30. Total of 5 numbers:  $34 \times 5 = 170$   
Total of 6 numbers:  $6 \times 40 = 240$   
The 6th number:  $240 - 170 = 70$  (M1, A1)

### Section C

(5 × 2 marks)

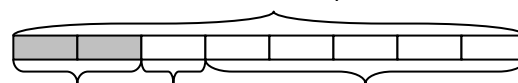
For Q1 to Q5, apply the following:  
*Correct method and correct answer: M1, A1*  
*Correct answer with no working: A2*  
*Correct method and wrong answer: M1, A0*  
*Incorrect method but correct answer (fluke): M0, A0*

1.  $15n \div 7 = \frac{15}{7}n$  (M1, A1)

2.  $(3 \times 25 \div 5) - 5 = 15 - 5$   
 $= 10$  (M1, A1)

3. Total distance =  $50 \text{ km} \times 6$   
 $= 300 \text{ km}$  (M1)  
Time taken =  $300 \text{ km} \div 60 \text{ km}$   
 $= 5 \text{ h}$  (A1)

4. Total amount of paint



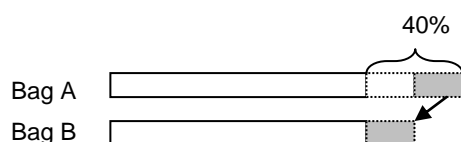
Container A                      Container B                      Container C

From the model, we see that:

Container A → 2 units  
Container B → 1 unit  
Container C → 5 units (M1)

A : B : C  
2 : 1 : 5 (A1)

5.



20% → 48 beads  
40% →  $\frac{40}{20} \times 48 = 96$  beads  
100% →  $\frac{100}{20} \times 48 = 240$  beads  
 $96 + 240 + 240 = 576$  beads (M1, A1)

6. Number of months worked: 9 months (M1)

Total salary:  $9 \times R1400$   
 $= R12\ 600$  (M1)

Average per month:  $R12\ 600 \div 12$   
 $= R1050$  (M1, A1)

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7. Distance:  $\frac{1}{3} \times 72\text{ km} = 24\text{ km}$  (M1)

Time taken:  $24\text{ km} \div 60\text{ km}$   
 $= \frac{2}{5}\text{ h}$  or  $0.4\text{ h}$  (M1, A1)

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8. Length of ribbon left after giving 2.4 m to each friend:  $24.1\text{ m} - (2.4\text{ m} \times 2)$   
 $= 19.3\text{ m}$  (M1)

$78\text{ cm} = 0.78\text{ m}$

Length of ribbon left for typing parcels:  
 $19.3\text{ m} - 0.78\text{ m} = 18.52\text{ m}$  (M1)

Maximum number of parcels to tie:  
 $18.52\text{ m} \div 0.55\text{ m} \approx 33$  (M1, A1)

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9. Area of base:  $31\text{ cm} \times 10\text{ cm}$   
 $= 310\text{ cm}^2$

10 litres =  $10\ 000\text{ cm}^3$  (M1)

Volume of tank:  $10\ 000\text{ cm}^3 + 2400\text{ cm}^3$   
 $= 12\ 400\text{ cm}^3$  (M1)

Height of tank:  $12\ 400\text{ cm}^3 \div 310\text{ cm}^2$   
 $= 40\text{ cm}$  (M1, A1)

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10.  $\angle ECD = 60^\circ$

$\angle BCD = 90^\circ + 60^\circ = 150^\circ$  (M1)

$\angle CBD$  and  $\angle CDB = 180^\circ - 150^\circ$   
 $= 30^\circ$  (M1)

$30^\circ - 5^\circ = 25^\circ$

$\angle CBD = 25^\circ \div 2 = 12.5^\circ$  (M1, A1)

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11. Remainder of allowance:  $\frac{3}{4} \times R240$   
 $= R180$  (M1)

Savings per month:  $R180 \times 50\%$   
 $= R90$  (M1)

Number of months:  $R1406 \div R90$   
 $= 16$  (M1, A1)

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12. Number A  $\rightarrow 8$  units

Number B  $\rightarrow 27$  units (M1)

Difference in units  $\rightarrow 19$  units (M1)

$35$  units  $\rightarrow 141.75$

1 unit  $\rightarrow 141.75 \div 35 = 4.05$  (M1)

19 units  $\rightarrow 19 \times 4.05 = 76.95$  (M1, A1)

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13. Number of bouquets of 120 roses:  
 $1800 \div 12 = 150$

Number of bouquets of 90 roses:  
 $1800 \div 9 = 200$

Total number of bouquets:  $150 + 200$   
 $= 350$  (M2, A1)

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14. Total number of digits in 1-digit numbers: 9

Total number of digits in 2-digit numbers:  
 $(99 - 9) \times 2 = 180$

Total number of digits in 3-digit numbers:  
 $957 - 9 - 180 = 768$  (M1)

$768 \div 3 = 256$

Total number of pages:  $99 + 256$   
 $= 355$  (M1, A1)

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15. (a)

Red beans : Green beans : Black beans  
 $4 : 5$   
 $3 : 5$   
 $12 : 15 : 25$  (M1)

25 units  $\rightarrow 50$  beans  
 1 unit  $\rightarrow 2$  beans  
 12 units  $\rightarrow 24$  beans  
 There are 24 red beans. (M1, A1)

(b)  $12 + 15 + 25 = 52$   
 $52$  units  $\rightarrow 104$  beans  
 There are 104 beans altogether. (M1, A1)

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16. Area of smaller semicircle =  $\frac{1}{2} \times \pi \times r^2$   
 $= \frac{1}{2} \times \frac{22}{7} \times 3.5^2$   
 $= 19.25\text{ cm}^2$  (M1)

Area of bigger semicircle =  $\frac{1}{2} \times \pi \times r^2$   
 $= \frac{1}{2} \times \frac{22}{7} \times 4.5^2$   
 $= 31.82\text{ cm}^2$  (M1)

Area of shaded part =  $31.82\text{ cm}^2 - 19.25\text{ cm}^2$   
 $= 12.57\text{ cm}^2$  (A1)

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17. Number of stamps Dan had at first:

$$\frac{1120}{14} \times 3 = 240 \text{ stamps}$$

Number of stamps Eric had at first:

$$\frac{1120}{14} \times 5 = 400 \text{ stamps}$$

Number of stamps Felix had at first:

$$\frac{1120}{14} \times 6 = 480 \text{ stamps}$$

Number of stamps Eric gave:

$$\frac{10}{100} \times 400 = 40 \text{ stamps} \quad (\text{M1})$$

Number of stamps Felix gave:

$$\frac{1}{6} \times 480 = 80 \text{ stamps} \quad (\text{M1})$$

Number of stamps Dan has now:

$$240 + 40 + 80 = 360 \text{ stamps} \quad (\text{A1})$$

18.  $\frac{3}{4}$  of circumference of circle:

$$\frac{3}{4} \times 2\pi r$$

$$= \frac{3}{4} \times 2 \times \frac{22}{7} \times 14$$

$$= 66 \text{ cm} \quad (\text{M1})$$

Perimeter of big square:  $28 \times 4$

$$= 112 \text{ cm} \quad (\text{M1})$$

Perimeter of 2 radii:  $14 \times 2$

$$= 28 \text{ cm} \quad (\text{M1})$$

Perimeter of shaded region:

$$66 + 112 + 28$$

$$= 206 \text{ cm} \quad (\text{M1, A1})$$