Solutions to 2015 First Form Mathematics Promotion Exam

Section A – Multiple Choice (1 mark each)

1) A
2) D
3) A
4) B
5) C
6) B
7) B
8) D
9) C
10) B

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11. $a(b-c) = -2[3-(-3)]$ 1 mark for correct substitution of values

$= -2 \times 6 = -12$ 1 mark

12. $\frac{1}{4} \times 30000 = 7500$ 1 mark

$\frac{1}{3} \times 30000 = 10000$ 1 mark

Total 17500 tickets

$30000 - 17500 = 12500\ tickets\ sold\ for\ \$75\ each$ 1 mark

13. a) 3 1 mark

b) $n(F \cup C) = 5 + 2 + 4 = 11$ 1 mark

c) $n(F \cap C)' = 5 + 4 + 3 = 12$ 2 marks

14. i) $\frac{80}{100} \times 1200 = \$960$ 1 mark for this or similar working where 20 % discount is recognised

1 mark for correct answer

ii) sum of all installments $= 74 \times 12 = \$888$ 1 mark

deposit payable $= \$768$ 1 mark for including deposit in total price

total hire purchase price $= \$1656$ 1 mark

iii) 88% represents \$2156

1% represents $\frac{2156}{88}$ 2 marks for this or similar working where 12% discount is recognised

100% represents $\frac{2156}{88} \times 100 = \$2450$ 1 mark

15. a) $5x - 10 = 3x + 12$

$5x - 3x = 12 + 10$

$2x = 22$ 1 mark

$x = \frac{22}{2} = 11$ 1 mark

b) $6 - 2y = 4y - 12$

$6 + 12 = 4y + 2y$

$18 = 6y$ 1 mark

$\frac{18}{6} = y \therefore y = 3$ 1 mark

c) $3z = 22 + 7$

$3z = 29$ 1 mark

$z = \frac{29}{3} = 9\frac{2}{3}$ 1 mark

16) $90 - 25 = 65$ 1 mark

$75 + 65 = 140$ 1 mark

$P = 180 - 140 = 40$ 1 mark

17) a) $60 + 30 = 90$

$120 + 90 = 210$ 1 mark

$\therefore x + y = 360 - 210 = 150$ 1 mark

b) 360^o represents 240 g 1 mark

150^o represents $\frac{240}{360} \times 150 = 100\ g$ 1 mark

18) a) perimeter = $6 + 4 + 5 + 3 + 8 = 26\ m$ 1 mark for correct values

1 mark for correct answer

b) area = $(6 \times 4) + (4 \times 3) + \frac{1}{2}(4 \times 3)$ 2 marks for all correct values/ 1 mark if only part of area correct

$= 24 + 12 + 6 = 42m^2$ 1 mark for correct answer