

Grade 8  
Cycle Test  
7 September  
2012

- 1.1 F
- 1.2 T
- 1.3 T
- 1.4 T
- 1.5 T
- 1.6 F

$$2.1 \left( \frac{2}{3} - 4\frac{5}{6} \right) \div \left( -\frac{5}{3} \right)^2$$

$$= \left( \frac{2}{3} - \frac{29}{6} \right) \div \frac{25}{9}$$

$$= \left( \frac{4}{6} - \frac{29}{6} \right) \times \frac{9}{25}$$

$$= -\frac{25}{6} \times \frac{9}{25}$$

$$= -\frac{3}{2} \rightarrow$$

$$2.2 -3^2 - 3\sqrt{-8} + \sqrt{9+16}$$

$$= -9 - (-2) + \sqrt{25}$$

$$= -9 + 2 + 5$$

$$= -2 \rightarrow$$

- 3.1 Centroid
- 3.2 Orthocentre
- 3.3 Circumcentre
- 3.4 incentre

$$4.1 8ab + ab^2 - 11ab - 4ab^2$$

$$= -3ab^2 - 3ab$$

$$2. \frac{4a^2b^3}{-8ab^4}$$

$$= -\frac{a}{2b} \rightarrow$$

$$4.3 (2a^2b^4)(-6a^3b^2)^2$$

$$= (2a^2b^4)(36a^6b^4)$$

$$= 72a^8b^8 \rightarrow$$

$$4.4 4a^2 - 3a(a^2 + 2) - (2a)^3 - \frac{6a^5b^3}{3a^2 + 3a^2} \div b^3$$

$$= 4a^2 - 3a^3 - 6a - 8a^3 - \frac{6a^5b^3}{6a^5b^3} \div b^3$$

$$= 4a^2 - 3a^3 - 6a - 8a^3 - \frac{a^3b^3}{b^3}$$

$$= 4a^2 - 3a^3 - 6a - 8a^3 - a^3$$

$$= -12a^3 + 4a^2 - 6a \rightarrow$$

Q5.

$$5.1 5(x+10) = 35$$

$$5.2 \therefore x = -3 \rightarrow$$

Q6

$$6.1 \frac{x}{3} - 4 = 1$$

$$\frac{x}{3} = 1 + 4$$

$$\frac{x}{3} = 5$$

$$\therefore x = 15 \rightarrow$$

$$6.2 3x^2 + 2 = 50$$

$$3x^2 = 50 - 2$$

$$3x^2 = 48$$

$$x^2 = 16$$

$$\therefore x = \pm 4 \rightarrow$$

$$6.3 \frac{10x^3 - 4x^2 + 2x}{7x} = x(5x - 4) - 13$$

$$5x^2 - 2x + 1 = 5x^2 - 4x - 13$$

$$5x^2 - 5x^2 - 2x + 4x = -13 - 1$$

$$\frac{2x}{2} = \frac{-14}{2}$$

$$\therefore x = -7 \rightarrow$$

Q7

$$7.1 (x+3y)(x-3y)$$

$$= [-2 + 3(-3)][-2 - 3(-3)]$$

$$= (-2-9)(-2+9)$$

$$= (-11)(7)$$

$$= -77 \rightarrow$$

$$7.2 \frac{2x - 4y^2}{-5x}$$

$$= \frac{2(-2) - 4(-3)^2}{-5(-2)}$$

$$= \frac{-4 - 4(9)}{10}$$

$$= \frac{-4 - 36}{10}$$

$$= \frac{-40}{10}$$

$$= -4 \rightarrow$$

Q8

let the no. of toffees be  $x+3$   
 " chocolate "  $x$   
 " biscuitsweets "  $2(x+3)$

$$x+3 + x + 2(x+3) = 69$$

$$x+3+x+2x+6 = 69$$

$$4x+9 = 69$$

$$4x = 60$$

$$\therefore x = 15$$

$\therefore$  there are 15 chocolate in the bag

Q9.

$$9.1 \quad A = \frac{\pi \times 7^2}{2} + \frac{14 \times 7}{2}$$

$$= 76,96902 + 49$$

$$= \underline{125,97 \text{ mm}^2}$$

$$9.2 \quad A = \frac{120 \times 160}{2}$$

$$= \underline{9600 \text{ cm}^2}$$

$$AC = \frac{9600 \times 2}{96}$$

$$= \underline{200 \text{ cm}}$$

$$\therefore P = 200 + 120 + 160$$

$$= \underline{480 \text{ cm}}$$

Q10

$$10.1 \quad A(2;4)$$

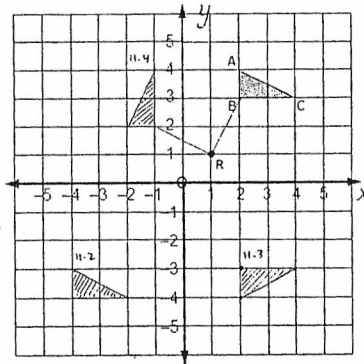
$$B(2;3)$$

$$C(4;3)$$

10.2

10.3

10.4



$$Q11. \quad b = 90^\circ - 42^\circ \text{ (Adj. comp. L's)}$$

$$= \underline{48^\circ}$$

$$a = 180^\circ - 90^\circ \text{ (L's on str. line AD)}$$

$$= \underline{90^\circ}$$

$$Q12. \quad a = 48^\circ \text{ (vert. opp. L's)}$$

$$b = 42^\circ \text{ (L's on str. line LP)}$$

$$c = 42^\circ \text{ (vert. opp. L's)}$$

$$d = 90^\circ \text{ (vert. opp. L's)}$$

Q13.

13.1 let the length/diameter be  $x$

$$4x + \pi \cdot x = 100 \text{ cm}$$

$$x(4 + \pi) = 100 \text{ cm}$$

$$x = \frac{100}{(4 + \pi)}$$

$$\therefore x = \underline{14 \text{ cm}}$$

$$13.2 \quad \text{Square} = 14 \times 4$$

$$= \underline{56 \text{ cm}^2}$$

$$\text{Circle} = \pi \times 14$$

$$= 43,98$$

$$\approx \underline{44 \text{ cm}^2}$$

Bonus Q's

1. 59246

2. 101