

9th - CBSE
CT-1M
Solutions

4th Aug '18

Section: A

1) $2\sqrt{5} + 3\sqrt{7}$

2) $P(-4) = 0$

$$(-4)^2 + 11(-4) + k = 0$$

$$16 - 44 + k = 0$$

$$k = 44 - 16$$

$$\boxed{k = 28}$$

3) $\angle ABC = 100^\circ - 40^\circ$
 $= 60^\circ$

4) $\sqrt{2} - 3$

5) Assumptions

Section: B

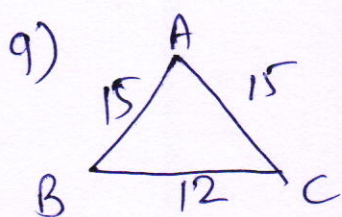
6) $3\sqrt[3]{8 \times 5} - 4\sqrt[3]{8 \times 8 \times 5} - \sqrt[3]{5}$
 $= 3 \times 2\sqrt[3]{5} - 4 \times 2 \times 2 \times \sqrt[3]{5} - \sqrt[3]{5}$
 $= 6\sqrt[3]{5} - 16\sqrt[3]{5} - \sqrt[3]{5}$
 $= -11\sqrt[3]{5}$

$$\begin{aligned}
 7) \quad p(2) &= (2)^4 - 3(2)^2 + 7(2) - 10 \\
 &= 16 - 12 + 14 - 10 \\
 &= \cancel{26} 30 - 22
 \end{aligned}$$

$$p(2) = 8$$

$$\begin{aligned}
 8) \quad x + (x + 20^\circ) &= 90^\circ \\
 2x + 20^\circ &= 90^\circ \\
 2x &= 70^\circ \\
 x &= 35^\circ
 \end{aligned}$$

\therefore The angle = 55° .



$$S = \frac{a+b+c}{2} = \frac{15+15+12}{2} = 21$$

$$\text{ar}(\triangle ABC) = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{21(6)(6)(9)}$$

$$= 6 \times 3 \sqrt{21}$$

$$= 18\sqrt{21} \text{ sq units}$$

Section : C

10)

$$x^a = y$$

$$(z^c)^a = y$$

$$(y^b)^{ac} = y$$

$$y^{abc} = y^1$$

$$\therefore \boxed{abc = 1}$$

$$\therefore x = z^c$$

$$\therefore z = y^b$$

11)

$$\frac{2\sqrt{6} - \sqrt{5}}{3\sqrt{5} - 2\sqrt{6}} \times \frac{3\sqrt{5} + 2\sqrt{6}}{3\sqrt{5} + 2\sqrt{6}}$$

$$= \frac{6\sqrt{30} + 24 - 15 - 2\sqrt{30}}{(3\sqrt{5})^2 - (2\sqrt{6})^2}$$

$$= \frac{4\sqrt{30} + 9}{45 - 24}$$

$$a + b\sqrt{30} = \frac{4\sqrt{30} + 9}{21}$$

$$\therefore a = \frac{9}{21} = \frac{3}{7}$$

$$\& b = \frac{4}{21}$$

12)

$$a^3 + b^3 + c^3 - 3abc$$

$$= (a+b+c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

$$= (a+b+c) [(a+b+c)^2 - 2(ab+bc+ca) - (ab+bc+ca)]$$

$$\therefore (a+b+c)^2 = a^2 + b^2 + c^2 - 2ab - 2bc - 2ca$$

$$= 6 [(6)^2 - 3(11)]$$

$$= 6 (36 - 33)$$

$$= 18$$