

Test:

Part I: 15 Mult.Choice (15 marks)

Part II: Free Response (Show all work!)  
(30 marks)

## Test for Practice:

$$1. \quad e) \quad 3^0 + 2^{-1} + \left(\frac{1}{2}\right)^{-2} - 4^0 \left(2^{-2} + \frac{3^{-1}}{4}\right)$$

$$= 1 + \frac{1}{2} + \left(\frac{2}{\frac{1}{2}}\right)^2 - 1 \left(\frac{1}{2^2} + \frac{1}{3 \cdot (4)}\right)$$

$$= 1 + \frac{1}{2} + 4 - 1 \left(\frac{1}{4} + \frac{1}{12}\right)$$

$$= 1 + \frac{1}{2} + 4 - 1 \left(\frac{3}{12} + \frac{1}{12}\right)$$

$$= 1 + \frac{1}{2} + 4 - 1 \left(\frac{4}{12}\right)$$

$$= 1 + \frac{1}{2} + 4 - \frac{1}{3}$$

$$= 5 + \frac{3}{6} - \frac{2}{6}$$

$$= 5 + \frac{1}{6}$$

$$= 5 \frac{1}{6}$$

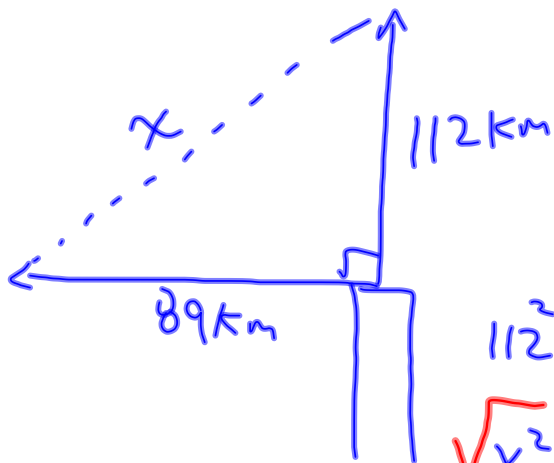
$$= \frac{30}{6} + \frac{1}{6}$$

$$= \frac{31}{6}$$

$$27^{-2/3}$$

$$= \frac{1}{\left(\sqrt[3]{27}\right)^2}$$

$$= \frac{1}{9}$$



$$112^2 + 89^2$$

20465

$$112^2 + 89^2 = x^2$$

$$\sqrt{x^2} = \sqrt{20465}$$

$$x = \underline{143.06 \text{ km}}$$

$$\begin{aligned}
& \frac{(8x^6y^{12})^{-1/3} (-4x^3y)^3}{(-2x^6y^8)^{-2} (3x^2y^4)^2} \\
& \frac{(-2x^6y^8)^2 (-4x^3y)^3}{(8x^6y^{12})^{1/3} (3x^2y^4)^2} \\
& = \frac{(4x^{12}y^{16})(-64x^9y^3)}{(2x^2y^4)(9x^4y^8)} \\
& = \frac{-24x^{21}y^{19}}{18x^6y^{12}} \\
& = -\frac{4}{3}x^{15}y^7
\end{aligned}$$

$$6\sqrt{15}$$

3.  $6 \cdot \sqrt{15}$

$$(III) \frac{3}{2\sqrt{2}} - \frac{5}{\sqrt{5}}$$

$$\frac{3}{2(2\sqrt{3})} - \frac{5}{3\sqrt{3}}$$

$$\frac{3}{4\sqrt{3}} - \frac{5}{3\sqrt{3}}$$

$$\frac{3}{4\sqrt{3}} \left( \frac{\sqrt{3}}{\sqrt{3}} \right) - \frac{5}{3\sqrt{3}} \left( \frac{\sqrt{3}}{\sqrt{3}} \right)$$

$$\frac{3\sqrt{3}}{4} - \frac{5\sqrt{3}}{9}$$

$$= \frac{\sqrt{3}}{4} - \frac{5\sqrt{3}}{9}$$

$$\frac{9\sqrt{3} - 20\sqrt{3}}{36}$$

$$= \frac{-11\sqrt{3}}{36}$$

$$\frac{\frac{3}{\sqrt{2}} + \frac{2}{\sqrt{5}}}{3\sqrt{5} + 2\sqrt{2}}$$

$$\frac{9 - 20}{12\sqrt{3}}$$

$$\frac{-11}{12\sqrt{3}} \left( \frac{\sqrt{3}}{\sqrt{3}} \right)$$

$$= \frac{-11\sqrt{3}}{36}$$

1.6

$$\begin{aligned} 19. e) \quad & \frac{32^{1/5}}{8^{-1/3}} \\ &= (32^{1/5})(8^{1/3}) \\ &= (2)(2) \\ &= 4 \end{aligned}$$

$$\frac{(3-2)^{-1}}{4}$$

Test For Practice      $a=3$     $b=-1$

$$\#6 \text{ c) } 7a^4b^{-2} + \frac{3b^2}{7ab^{-2}} - \frac{4a^6b^3}{ab^{-1}}$$

$$= \frac{7a^4}{b^2} + \frac{3b^4}{7a} - 4a^5b^3$$

$$= \frac{7(3)^4}{(-1)^2} + \frac{3(-1)^4}{7(3)} - 4(3)^5(-1)^3$$

$$= \left( \frac{567}{1} \right) + \frac{3}{21} + 972$$

$$= \frac{1539}{1} + \frac{1}{7} = 1539\frac{1}{7}$$

$$= \frac{10773}{7} + \frac{1}{7}$$

$$= \frac{10774}{7}$$

$$\begin{aligned}
 & \text{2.10} \\
 & \text{3. c) } \frac{(\sqrt{2}+1)}{\sqrt{2}-1} \left( \frac{\sqrt{2}+1}{\sqrt{2}+1} \right) \\
 & = \frac{2 + \sqrt{2} + \sqrt{2} + 1}{2 - 1} \\
 & = \frac{3 + 2\sqrt{2}}{1}
 \end{aligned}$$

$$\begin{aligned}
 & (\sqrt{2}+1) / (\sqrt{2}-1) \\
 & ) \quad 5.828427125 \\
 & 3 + 2\sqrt{2} \\
 & \quad 5.828427125
 \end{aligned}$$

$$\begin{aligned}
 & \text{Ex. 1.9} \\
 & \text{\#16) } -\frac{6}{\sqrt{2}} \left( \frac{\sqrt{2}}{\sqrt{2}} \right) \\
 & = -\frac{6\sqrt{2}}{2} \\
 & = -3\sqrt{2}
 \end{aligned}$$