

# TEST 2A

$$1/ \frac{(r^{-2} s^{1/3})^6}{r^8 s^{3/2}} = \frac{r^{-12} s^2}{r^8 s^{3/2}}$$

$$= \frac{s^{1/2}}{r^2}$$

$$7/ \frac{12}{\sqrt{8} + \sqrt{5}} = \frac{12}{\sqrt{8} + \sqrt{5}} \cdot \frac{\sqrt{8} - \sqrt{5}}{\sqrt{8} - \sqrt{5}}$$

$$= \frac{12(\sqrt{8} - \sqrt{5})}{8 - 5}$$

$$= 4(\sqrt{8} - \sqrt{5}) = 4(2\sqrt{2} - \sqrt{5})$$

$$2/ (a^{1/2} - 3^{3/2})(a^{1/2} + 3^{3/2})$$

$$= (a^{1/2})^2 - (3^{3/2})^2$$

$$= a - 3^3$$

$$= a - 27$$

$$8/ 1 + \sqrt{x+6} = \sqrt{2x+13}$$

$$\Rightarrow 1 + 2\sqrt{x+6} + x+6 = 2x+13$$

$$\Rightarrow 2\sqrt{x+6} = x+6$$

$$\Rightarrow 4(x+6) = x^2 + 12x + 36$$

$$\Rightarrow x^2 + 8x + 12 = 0$$

$$(x+6)(x+2) = 0$$

$$x = -6 \quad \text{or} \quad x = -2$$

check ✓                      check ✓

$$3/ (3x^{1/2} - 4y^{1/2})^2$$

$$= (3x^{1/2})^2 - 2(3x^{1/2})(4y^{1/2}) + (4y^{1/2})^2$$

$$= 9x - 24x^{1/2}y^{1/2} + 16y$$

$$4/ 6(x+3)^{15/7} - 12(x+3)^{8/7}$$

$$= 6(x+3)^{8/7} [(x+3) - 2]$$

$$= 6(x+1)(x+3)^{8/7}$$

$$9/ \text{Using } (x_1, y_1) = (-8, -3), (x_2, y_2) = (-4, -4)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 + 3}{-4 + 8} = \frac{-1}{4}$$

$$5/ \frac{\sqrt{x+1}}{1 - \sqrt{x+1}}$$

$$= \frac{\sqrt{x+1}}{1 - \sqrt{x+1}} \cdot \frac{1 + \sqrt{x+1}}{1 + \sqrt{x+1}}$$

$$= \frac{\sqrt{x+1} + x+1}{1 - (x+1)}$$

$$= \frac{\sqrt{x+1} + x+1}{-x}$$

Now using  $y - y_1 = m(x - x_1)$

$$\Rightarrow y + 3 = -\frac{1}{4}(x + 8)$$

$$y = -\frac{1}{4}x - 5$$

$$10/ 3x + 11y = 4 \Rightarrow m_1 = -\frac{3}{11}$$

$$\Rightarrow m = \frac{11}{3}, (6, 5) = (x_1, y_1)$$

$$y - 5 = \frac{11}{3}(x - 6)$$

$$y = \frac{11}{3}x - 22 + 5$$

$$y = \frac{11}{3}x - 17$$

$$6/ \sqrt{18a^{11}b^7} + a^2b\sqrt{32a^7b^5}$$

$$= \sqrt{9a^{10}b^6} \sqrt{2ab} + a^2b\sqrt{16a^6b^4} \sqrt{2ab}$$

$$= 3a^5b^3\sqrt{2ab} + a^2b \cdot 4a^3b^2\sqrt{2ab}$$

$$= 3a^5b^3\sqrt{2ab} + 4a^5b^3\sqrt{2ab}$$

$$= 7a^5b^3\sqrt{2ab}$$