

FP Test Corrections

$$1) P = 1386 b^2$$

$$s = 96$$

$$96 \div 2 = 4.56$$

$$(4.56)^2 = 20.25 b^2$$

$$20.25 b^2 - 1386 b^2 = 1406.25 b^2$$

$$\sqrt{1406.25 b^2} = 37.5 b$$

$$4.56 - 37.5 b = -33 b$$

$$4.56 + 37.5 b = 42 b$$

$$18a^2 - 33ab + 42ab - 77b^2$$

$$\begin{array}{cc} \downarrow & \downarrow \\ 3a(6a+11b) & -7b(6a+11b) \end{array}$$

$$(3a-7b)(6a+11b)$$

$$2b) \frac{(x^2+4)(x+2)(x-2)}{(x-2)^2} \times \frac{(2+x)(2-x)}{(x)(x^2+4)} \times \frac{(x^2+4)}{(x-2)}$$

$$= \frac{\cancel{(x^2+4)}(x+2)\cancel{(x-2)}(2+x)(2-x)\cancel{(x^2+4)}}{(x-2)\cancel{(x-2)}\cancel{(x)}\cancel{(x^2+4)}(x-2)}$$

$$= \frac{(x+2)(2+x)(x^2+4)}{(x-2)(x)(x-2)}$$

$$= \frac{(x+2)(2+x)(x^2+4)}{x(x-2)^2}$$

$$= \frac{x^2(x+2)^2}{x(x-2)}$$

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$$2c) \frac{(3a-2)(a^2+13a+36) - ((1)(a^2-5a-36))}{(a^2+13a+36)(a^2-5a-36)}$$

$$\frac{(3(a^3+12a^2+29a-12)) - ((4a+5)(a+4)^2(a+9)(a-9))}{(a+4)^2(a+9)(a-9)(a^2-81)}$$

$$= \frac{4a^5 + 37a^4 - 223a^3 - 2953a^2 - 8511a - 6444}{2(a+4)(a+9)^2(a-9)^2}$$

$$= \frac{-a^2 + 3a - 29}{a^3 + 4a - 81a - 324}$$

$$= \frac{-a^2 + 3a - 29}{(a+4)(a-9)(a+9)}$$

$$3a) \sqrt{49} = 7$$

$$\sqrt{36x} = 6x$$

$$(x)(60)(7) = 84x$$

$$84x \div x = 84$$

$$\therefore k = 84$$

$$3b) \sqrt{49a^2} = 7a$$

$$56a \div 2 \div 7a = 4$$

FP Test Corrections

$$5a) \quad a^2 - \frac{6a}{15} - \frac{21}{15} = 0$$

$$a^2 - \frac{6a}{15} = \frac{21}{15} = \frac{21}{15}$$

$$a^2 - \frac{6a}{15} + \left(\frac{6}{15} \div 2\right)^2 = \frac{21}{15} + \left(\frac{6}{15} \div 2\right)^2$$

$$\left(a - \frac{6}{15}\right)^2 = \frac{36}{25}$$

$$a - \frac{6}{15} = \frac{6}{5}$$

$$a = \frac{6}{15} \pm \frac{6}{5}$$

$$a = \frac{7}{5}, -1$$

$$5b) \quad b(b+2) = 21$$

$$= b^2 + 2b = 21$$

$$b^2 + 2b + (2 \div 2)^2 = 21 + (2 \div 2)^2$$

$$(b+1)^2 = 22$$

$$b+1 = \sqrt{22}$$

$$b = -1 \pm \sqrt{22}$$

$$b = -1 + \sqrt{22}, -1 - \sqrt{22}$$

$$= 3.69, -5.69$$

$$5c) \quad 2c - 5 - \frac{3}{c} = \frac{7}{4c}$$

$$8c^2 - 12c - 12 = 7$$

$$8c^2 - 12c - 19 = 0$$

$$c^2 - \frac{12c}{8} - \frac{19}{8} = 0$$

$$c^2 - \frac{3c}{2} = \frac{19}{8}$$

$$c^2 - \frac{3c}{2} + \left(-\frac{3}{2} \div 2\right)^2 = \frac{19}{8} + \left(-\frac{3}{2} \div 2\right)^2$$

$$\left(c - \frac{3}{4}\right)^2 = \frac{617}{256}$$

$$c - \frac{3}{4} = \frac{\sqrt{617}}{16}$$

$$c = \frac{3}{4} \pm \frac{\sqrt{617}}{16}$$

$$c = \frac{6 + \sqrt{617}}{16}, \quad \frac{6 - \sqrt{617}}{16}$$

$$6a) \quad x^2 - 4x + 6 = \frac{3}{8}$$

$$x^2 - 4x + \frac{49}{8} = 0$$

$$a = 1$$

$$b = -4$$

$$c = 5.625$$

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(5.625)}}{2(1)}$$

$$x = \frac{4 \pm \sqrt{16 - 22.5}}{2}$$

$$x = \frac{4 \pm \sqrt{-6.5}}{2}$$

$$x = \frac{4 + i\sqrt{26}}{4} \quad \text{or} \quad \frac{4 - i\sqrt{26}}{4}$$

$$\begin{aligned} 4) \quad a &= 3 \\ b &= -5 \\ c &= -6 \end{aligned}$$

$$\begin{aligned} & \frac{5 \pm \sqrt{(-5)^2 - 4(3)(-6)}}{2(3)} \\ &= \frac{5 \pm \sqrt{25 + 72}}{6} \\ &= \frac{5 \pm \sqrt{97}}{6} \\ &= \frac{5 + \sqrt{97}}{6} \quad \text{OR} \quad \frac{5 - \sqrt{97}}{6} \\ &= 2.47 \quad \text{OR} \quad -0.91 \end{aligned}$$

$$\begin{aligned} 6c) \quad 4n(n-2) &= 41 \\ 36n^2 - 84n - 41 &= 0 \end{aligned}$$

$$\begin{aligned} a &= 36 \\ b &= -84 \\ c &= -41 \end{aligned}$$

$$\begin{aligned} & \frac{84 \pm \sqrt{(-84)^2 - 4(36)(-41)}}{2(36)} \\ &= \frac{84 \pm \sqrt{7056 + 5904}}{72} \\ &= \frac{84 \pm 36\sqrt{10}}{72} \\ &= \frac{84 + 36\sqrt{10}}{72} \quad \text{OR} \quad \frac{84 - 36\sqrt{10}}{72} \\ &= \frac{7 + 3\sqrt{10}}{6} \quad \text{OR} \quad \frac{7 - 3\sqrt{10}}{6} \\ &= 2.75 \quad \text{OR} \quad -0.41 \end{aligned}$$

$$7) ax^2 + bx + c = 0$$

$$x^2 + \frac{b}{a}x + \frac{c}{a} = 0$$

$$x^2 + \frac{b}{a}x = -\frac{c}{a}$$

$$x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2$$

$$\left(x + \frac{b}{2a}\right)^2 = \pm$$