

$$x^2 + (x-2)^2 = 100$$

$$x^2 + x^2 - 4x + 4 = 100$$

$$2x^2 - 4x + 4 = 100 \quad -100$$

$$2x^2 - 4x - 96 = 0 \quad :2$$

$$x^2 - 2x - 48 = 0$$

$$x = \frac{2 \pm \sqrt{2^2 - 4 \cdot 1 \cdot (-48)}}{2}$$

$$x = \frac{2 \pm \sqrt{4 + 192}}{2}$$

$$x = \frac{2 \pm \sqrt{196}}{2}$$

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

$$x_1 = \frac{2+14}{2} = \frac{16}{2} = 8$$

$$x_2 = \frac{2-14}{2} = \frac{-12}{2} = -6$$

סעיף 10: הוכחה

$$14 - (x-2)^2 = x(x-4)$$

$$14 - ((x-2)(x-2)) = x^2 - 4x$$

$$14 - (x^2 - 2x - 2x + 4) = x^2 - 4x$$

$$14 - (x^2 - 4x + 4) = x^2 - 4x$$

$$14 - x^2 + 4x - 4 = x^2 - 4x$$

$$-x^2 + 4x + 10 = x^2 - 4x \quad +x^2 - 4x - 10$$

$$0 = 2x^2 - 8x - 10 \quad :2$$

$$0 = x^2 - 4x - 5$$

$$x = \frac{4 \pm \sqrt{(-4)^2 - 4 \cdot 1 \cdot (-5)}}{2}$$

$$x = \frac{4 \pm \sqrt{16 + 20}}{2}$$

$$x = \frac{4 \pm \sqrt{36}}{2}$$

$$x = \frac{4 \pm 6}{2}$$

$$x_1 = \frac{4+6}{2} = \frac{10}{2} = 5$$

$$x_2 = \frac{4-6}{2} = \frac{-2}{2} = -1$$

$$X_1 = 17, 1/6 (6)$$

$$X_2 = -17$$

$$-17 < X < 17 \quad .2$$

$$(2 \cdot 10^4)(4 \cdot 10^3) =$$

$$2 \cdot 10^4 \cdot 4 \cdot 10^3 =$$

$$2 \cdot 4 \cdot 10^4 \cdot 10^3 =$$

$$\boxed{8 \cdot 10^7}$$

$$\sqrt{3}(\sqrt{12} - \sqrt{3})$$

$$\sqrt{3}(\sqrt{3} \cdot \sqrt{4} - \sqrt{3})$$

$$\sqrt{9} \cdot \sqrt{4} - \sqrt{9}$$

$$3 \cdot 2 - 3$$

$$6 - 3 = \boxed{3}$$

$$(2 + \sqrt{5})(2 - \sqrt{5})$$

$$4 - 2\sqrt{5} + \sqrt{5}$$

$$4 - 2\sqrt{5} + 2\sqrt{5} - 5$$

$$4 - 5 = \boxed{-1}$$

$$(\sqrt{2} + \sqrt{8})^2$$

$$(\sqrt{2} + \sqrt{8})(\sqrt{2} + \sqrt{8}) =$$

$$2 + 4 + 4 + 8 = \boxed{18}$$

$$iv(8)$$

$$ic(12)$$

$$.2$$

$$.2$$

$$I \quad y = x^2 - 2x$$

$$II \quad y = x^2 + 6x + 8$$

$$I \quad x^2 - 2y = x^2 + 6x + 8 \quad | -x^2$$

$$II \quad -2x = 6x + 8 \quad | -6x$$

$$II \quad -8x = 8 \quad | :8$$

$$II \quad -x = 1 \quad | \cdot -1$$

$$II \quad \boxed{x = -1}$$

$$I \quad y = (-1)^2 - (2 \cdot -1)$$

$$I \quad y = 1 + 2$$

$$I \quad \boxed{y = 3}$$

$$\boxed{12, 5} \quad \text{problem} \quad \text{problem}$$

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$$\boxed{12 + 5 + 13 = 30}$$

$$x^2 \rightarrow x$$

(12)

$$a^2 + b^2 = c^2$$

$$x^2 + (x+7)^2 = 13^2$$

$$x^2 + (x+7)(x+7) = 13^2$$

$$x^2 + x^2 + 7x + 7x + 49 = 169$$

$$2x^2 + 14x + 49 = 169 \quad | -169$$

$$2x^2 + 14x - 120 = 0$$

$$2x^2 + 14x - 120 = 0 \quad | :2$$

$$x^2 + 7x - 60 = 0$$

$$-7 \pm \sqrt{7^2 - 4 \cdot (-60)}$$

$$-7 \pm 17$$

$$-7 \pm 17$$

$$-7 \pm 17$$

$$x_1 = \frac{-7 + 17}{2} = \frac{10}{2} = 5$$

$$x_2 = \frac{-7 - 17}{2} = \frac{-24}{2} = -12$$

$$\frac{x^2+x}{5x-15} = \frac{4}{x-3} \cdot (5x-15) \cdot (x-3)$$

$$\frac{(5x-15)(x^2+x) \cdot (x-3)}{(5x-15)} = \frac{(5x-15)(x-3) \cdot (4)}{(x-3)}$$

$$(x^2+x) \cdot (x-3) = (5x-15) \cdot 4$$

$$(x^2+x) \cdot (x-3) = 5(x-3) \cdot 4 \quad | : (x-3)$$

$$x \neq 3$$

Ans

$$(x-3) = 0 \quad | +3$$

$$\boxed{x_1 = 3}$$

$$x^2+x = 20 \quad | -20$$

$$x^2+x-20 = 0$$

$$\frac{-1 \pm \sqrt{1^2 - 4 \cdot (-20)}}{2}$$

$$\frac{-1 \pm \sqrt{81}}{2}$$

$$x_2 = \frac{-1+9}{2} = \frac{8}{2} \text{ Ans} = \boxed{4}$$

$$x_3 = \frac{-1-9}{2} = \frac{-10}{2} = \boxed{-5}$$

Ans (20)

$$\frac{3a^3 \cdot b^{-2}}{9a \cdot b} =$$

10 (20

$$\frac{3a^2 \cdot b^{-3}}{3 \cdot 3}$$

$$\frac{a^2 \cdot b^{-3} \cdot 3^{-1}}{3 \cdot 3}$$

.A

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

.A

$$(4-x)^2 /$$

$$(4-x)(4-x)$$

$$16 - 4x - 4x + x^2$$

$$x^2 - 8x + 16$$

$$\frac{x^2 - 5x}{x - 5}$$

.d

$$x^2 - 5(x)$$

$$\frac{x(x-5)}{x-5}$$

$$x$$

$$x^2 - mx - 6 = 0$$

(22)

$$m \pm \sqrt{(-m)^2 - 4 \cdot (-6)}$$

2

$$\frac{m \pm \sqrt{m^2 + 24}}{2} = 6 \quad | \cdot 2$$

$$\frac{m \pm \sqrt{m^2 + 24}}{2} = 6 \cdot 2$$

$$m \pm \sqrt{m^2 + 24} = 12 \quad | -m$$

$$\pm \sqrt{m^2 + 24} = 12 - m \quad | x^2$$

$$\sqrt{m^2 + 24} = (12 - m)^2$$

$$m^2 + 24 = (12 - m)(12 - m)$$

$$m^2 + 24 = 144 - 12m - 12m + m^2$$

$$m^2 + 24 = m^2 - 24m + 144$$

$$24 = -24m + 144$$

$$-120 = -24m \quad | : -1$$

$$120 = 24m \quad | : 24$$

$$\boxed{S = m}$$

$$\frac{s \pm \sqrt{s^2 + 24}}{2}$$

$$\frac{s \pm \sqrt{49}}{2}$$

$$\frac{s \pm 7}{2}$$

$$x_1 = \frac{s + 7}{2} = \frac{12}{2} = \boxed{6}$$

$$x_2 = \frac{s - 7}{2} = \frac{-2}{2} = \boxed{-1} \quad \text{הפסגה השנייה}$$