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Gr.9

Totaal: 65
Tyd: 1 uur

Kwartaal 3, Toets 2024 – Memorandum

VRAAG 1

Faktoriseer volledig:

1.1 $6axb - 2a^2xb + 4ax^2b^2$ (2)

$= 2axb\sqrt{(3 - a + 2xb)}\sqrt{}$

1.2 $b^4 - 16$ (2)

$= (b^2 - 4)(b^2 + 4)\sqrt{}$

$= (b - 2)(b + 2)\sqrt{(b^2 + 4)}$

1.3 $a^2 + a - 6$ (2)

$= (a + 3)\sqrt{(a - 2)}\sqrt{}$

1.4 $4b^2(a - x) + 36(x - a)$ (4)

$= 4b^2(a - x) - 36(a - x)\sqrt{}$

$= 4(a - x)\sqrt{(b^2 - 9)}\sqrt{}$

$= 4(a - x)(b - 3)(b + 3)\sqrt{}$

1.5 $a^2(x + b)^2 - 25$ (3)

$= [a(x + b) - 5]\sqrt{[a(x + b) + 5]}\sqrt{}$

$= (ax + ab - 5)(ax + ab + 5)\sqrt{}$

1.6 $3a^2 - 3ab - 6b^2$ (3)

$= 3(a^2 - ab - 2b^2)\sqrt{}$

$= 3(a - 2b)\sqrt{(a + b)}\sqrt{}$

VRAAG 2

Vereenvoudig volledig:

$$2.1 \quad \frac{2x^2y-4xy}{4x^2-4x-8} \quad (3)$$

$$= \frac{2xy(x-2)\sqrt{}}{4(x-2)(x+1)\sqrt{}}$$

$$= \frac{xy}{2(x+1)}\sqrt{}$$

$$2.2 \quad \frac{(y-x)^2}{x-y} \quad (2)$$

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

$$= -(y-x)\sqrt{}$$
 of $-y+x$

[5]

VRAAG 3

Los op vir x :

$$3.1 \quad 2(x-1) = 4-x \quad (3)$$

$$2x - 2\sqrt{=} 4 - x$$

$$3x = 6\sqrt{}$$

$$x = 2\sqrt{}$$

$$3.2 \quad x^2 = 2x \quad (4)$$

$$x^2 - 2x = 0\sqrt{}$$

$$x(x-2) = 0\sqrt{}$$

$$x = 0\sqrt{}$$
 of $x = 2\sqrt{}$

$$3.3 \quad 3(x-1)(2x+1) = 0 \quad (2)$$

$$x = 1\sqrt{}$$
 of $2x+1 = 0$

$$x = -\frac{1}{2}\sqrt{}$$

$$3.4 \quad \frac{x-2}{3} - \frac{x+3}{6} = 2 \quad (4)$$

$$2(x-2) - (x+3) = 12$$

$$2x - 4\sqrt{-}x - 3\sqrt{=} 12\sqrt{}$$

$$x = 19\sqrt{}$$

$$3.5 \quad x^2 + 10 = -7x \quad (4)$$

$$x^2 + 7x + 10 = 0\sqrt{}$$

$$(x+5)(x+2) = 0\sqrt{}$$

$$x = -5\sqrt{}$$
 of $x = -2\sqrt{}$

$$3.6 \quad \frac{1}{2x} - \frac{2}{x} - 1 = 0$$

(3)

$$1 - 4 - 2x\sqrt{} = 0\sqrt{}$$

$$-2x = 3$$

$$x = -\frac{3}{2}\sqrt{}$$

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VRAAG 4

4.1 Skryf die gradiënt van elkeen van die volgende grafieke neer:

4.1.1 $y = -x$

(1)

$$m = -1\sqrt{}$$

4.1.2 $2y + 4 = 6x$

(2)

$$y = 3x - 2\sqrt{}$$

$$m = 3\sqrt{}$$

4.1.3 $y = -2$

(1)

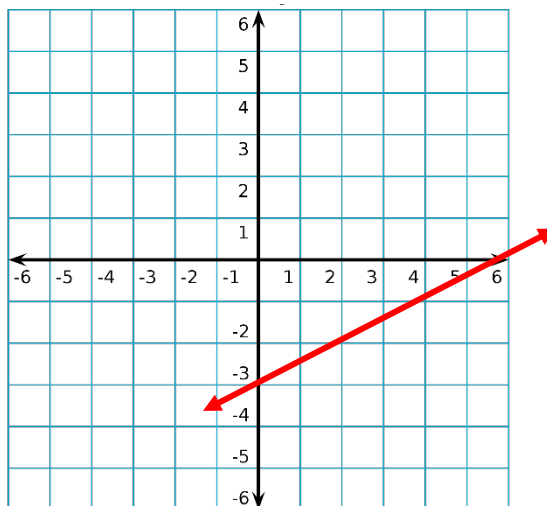
$$m \text{ is ongedefinieerd}\sqrt{}$$

4.2 Skets elkeen van die volgende grafieke elk op 'n aparte assestelsel:

4.2.1 $y = \frac{1}{2}x - 3$ -afsnit

(3)

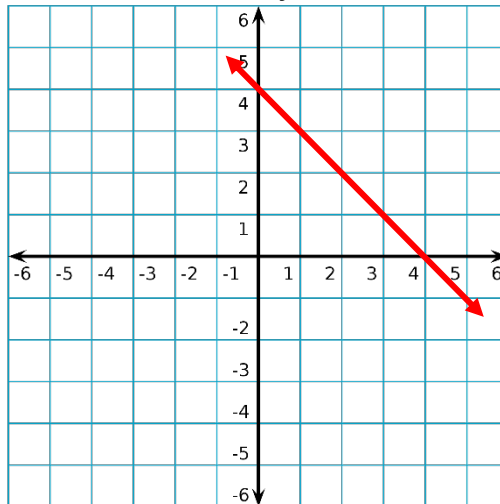
\sqrt{y} - afsnit; \sqrt{x} - afsnit; \sqrt{v} vorm



4.2.2 $y + x = 4$

(3)

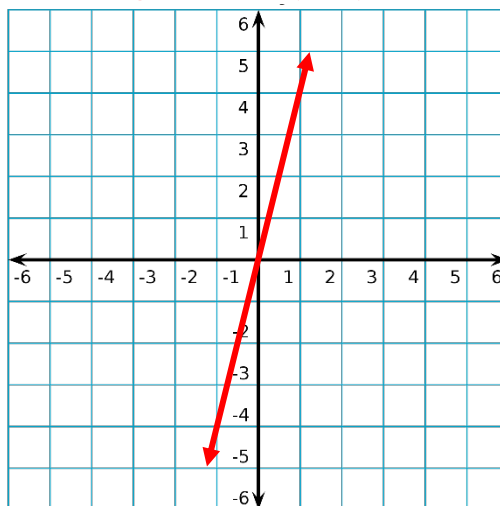
\sqrt{y} - afsnit; \sqrt{x} - afsnit; \sqrt{v} orm



4.2.3 $4x = y$

(3)

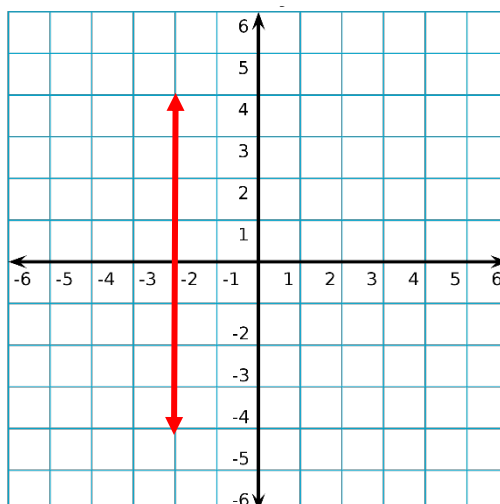
$\sqrt{\text{punt by die oorsprong}}$; $\sqrt{\text{punt (1; 4)}}$; \sqrt{v} orm



4.2.4 $x + 2 = 0$

(2)

\sqrt{x} - afsnit; \sqrt{v} orm - vertikale lyn



4.3 Bepaal die vergelyking van 'n reguitlyn wat deur die punte $(-1; 4)$ en $(5; -2)$ gaan. (4)

$$m = \frac{4 - (-2)}{-1 - 5} \checkmark = \frac{6}{-6} = -1 \checkmark$$

$$y = -x + c$$

$$4 = -(-1) \checkmark + c$$

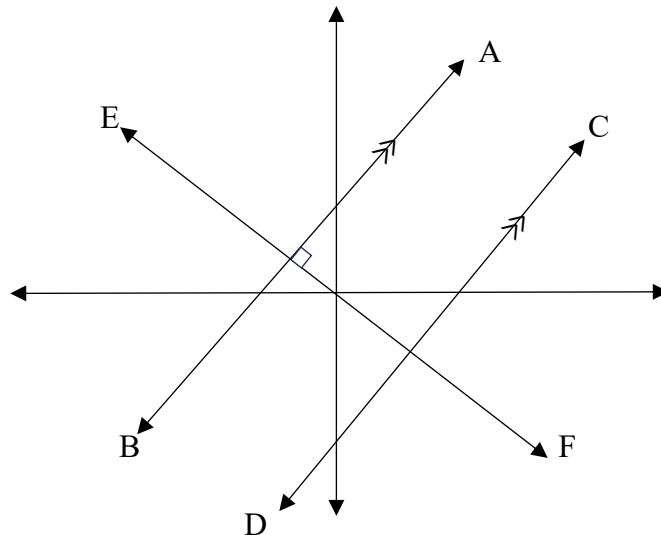
$$3 = c$$

$$y = -x + 3 \checkmark$$

4.4 Bepaal die vergelyking van 'n reguitlyn wat ewewydig aan die x -as is en deur die punt $(4; 6)$ gaan. (1)

$$y = 6 \checkmark$$

4.5 Beskou die volgende grafieke en skryf neer of elk van die gegewe stellings waar of vals is.



4.5.1 $m_{AB} = m_{CD}$ (1)

Waar \checkmark

4.5.2 $m_{AB} \cdot m_{EF} = -1$ (1)

Waar \checkmark

4.5.3 $m_{AB} > 0$ (1)

Waar \checkmark

4.5.4 $m_{EF} = 0$ (1)

Vals \checkmark

[24]

Totaal: [65]