Graad 9: November Vraestel 1 (Memo)

Vraag 1

			Punte
1.1)	C ✓	(1)	
1.2)	B ✓	(1)	
1.3)	C ✓	(1)	
1.4)	D ✓	(1)	
1.5)	C ✓	(1)	
		[5]	

Vraag 2

2.1) $-3a(a-b)(a+b)$

$= -3a(a^2-b^2)$ ✓

$= -3a^3+3ab^2$ ✓ (2)

✓(a^2-b^2)
✓antwoord
$-3a^3+3ab^2$

2.1.2) $(2a-b)^2 - \frac{2}{a}(a^3+a^2b)$

$= 4a^2 - 4ab + b^2 - 2a^2 - 2ab$ ✓ ✓ ✓

$= 2a^2 - 6ab + b^2$ ✓ (4)

✓$4a^2+b^2$
✓$-4ab$
✓$-2a^2-2ab$
✓antwoord

2.2.1) $3(a+b) - 9(a+b)^2$

$= 3(a+b)(1-3(a+b))$

$= 3(a+b)(1-3a-3b)$ ✓ ✓ (2)

✓Gemene faktor $3(a+b)$
✓$(1-3a-3b)$

2.2.2) $a^2(b^2-1)+a(b^2-1)-2(b^2-1)$

$= (b^2-1)(a^2+a-2)$

$= (b-1)(b+1)(a+2)(a-1)$ ✓ ✓ ✓ (4)

✓gemene faktor (b^2-1)
✓$(b-1)(b+1)$
✓$(a+2)$ ✓$(a-1)$

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Vraag 3

Punte

3.1.1) $\dfrac{-3a+2b}{3ab^2-2b^3}$

$= \dfrac{-(3a-2b)}{b^2(3a-2b)}$ ✓ teller ✓ noemer ✓ ontwoord

$= -\dfrac{1}{b^2}$ ✓ (3)

3.1.2) $\dfrac{16}{4a^2-4b^2} \div \dfrac{4}{(a-b)(a+b)}$ ✓ x inverse

$= \dfrac{16}{4(a-b)(a+b)} \times \dfrac{(a-b)(a+b)}{4}$ ✓ ✓ Gemene faktor en verstil in kwadrate.

$= 1$ ✓ (3) ✓ ontwoord

3.2.1) $36x^2 = 9x$ ✓ standaardvorm $=0$

$36x^2 - 9x = 0$ ✓

$9x(4x-1) = 0$ ✓ faktoriseer

$9x = 0$ of $4x-1=0$ ✓ $x=0$

$x = 0$ ✓ $x = \frac{1}{4}$ ✓ (4) ✓ $x = \frac{1}{4}$

3.2.2) $3^x \cdot 3^{2x} \cdot 3 = \frac{1}{9}$ ✓ 3^{3x+1}

$3^{3x+1} = 3^{-2}$ ✓ ✓ $\frac{1}{9} = 3^{-2}$

$3x+1 = -2$ ✓ ✓ Stel eksponente gelyk

$3x = -3$

$x = -1$ ✓ (4) ✓ $x = -1$

3.3.1) $\sqrt{(x^8)(x^{-8})} = \sqrt{x^0}$ ✓ $= \sqrt{1} = 1$ ✓ (2) ✓ x^0 ✓ 1

3.32) $\dfrac{(-x)^2(x^2)^0 + \sqrt[3]{8x^6}}{\frac{1}{x^{-2}}}$

$= \dfrac{x^2 + 2x^2}{x^2}$ ✓ ✓ ✓

$= \dfrac{3x^2}{x^2}$

$= 3$ ✓ (4)

✓x^2
✓$2x^2$
✓x^2
✓antwoord.

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Vraag 4

4.1) $20\,000 \times 0{,}1 = R2000$ deposito ✓

$36 \times 650 = R23400$

$A = P(1 + in)$ ✓A en P

$23400 = 18000(1 + i \times 3)$ ✓ ✓n=3

$\frac{234}{180} = 1 + i \times 3$ ✓vereenvoudig

$\frac{234}{180} - 1 = i \times 3$

$\left(\frac{\frac{234}{180} - 1}{3}\right) = \frac{r}{100} \times 3$ ✓

$0{,}1 = \frac{r}{100}$ (5)

$10\% = r$ ✓ r=10%

4.2) $A = p(1+i)^n$ ✓

$= 4000\left(1 + \frac{9}{100}\right)^4$ ✓

$= R5646,33$ ✓

Nee, sy sal nie genoeg geld hê nie. ✓ (4)

✓p in regte formule
✓i en n
✓R antwoord
✓gevolg.

4.3) R13 568 = 872 $

R1 = ? $

$872 \times \frac{1}{13568} = 0,06\$$ ✓ ✓

of $13\,568 \times \frac{1}{872} = R15,56$ ✓ ✓ (2)

✓bewerking
✓R1 = 0,06 $
óf
✓$1 = R15,56

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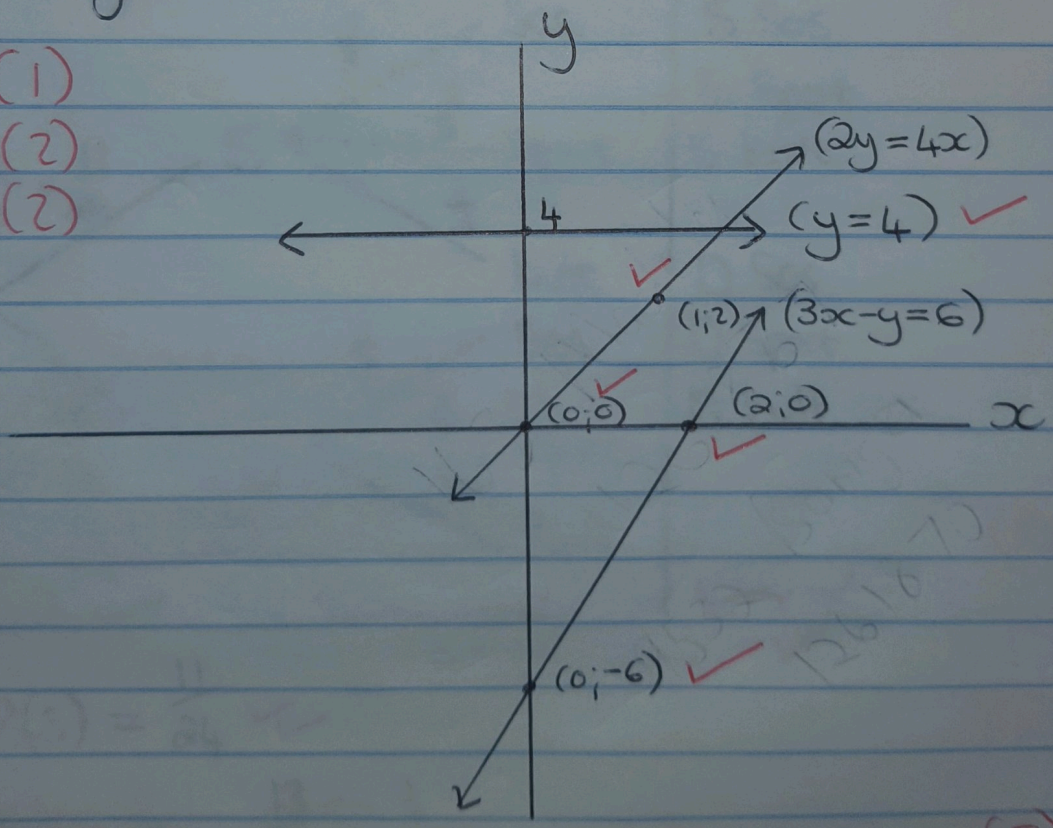
Vraag 5

5.1.1) (1)

5.1.2) (2)

5.1.3) (2)



✓y = 4

✓(0;0) en
✓(1;2) of ander punt

✓x-afsnit (2;0)

✓y-afsnit (0;−6)

(5)

Punte

5.2.1) AB: $x = -3$ ✓ (1)

5.2.2) CD: $y = 2x - 8$ ✓ ✓ (2) ✓ $m = 2$ ✓ $c = -8$

5.2.3) EF: $y = -\frac{1}{2}x$ ✓ ✓ (2) ✓ $m = -\frac{1}{2}$ en ✓ $c = 0$

5.3) $3x - 3y = 6$

$-3y = -3x + 6$ ✓

$y = x - 2$ ✓ Standaardvorm

$\therefore y = x$ ✓ (2) ✓ $y = x$

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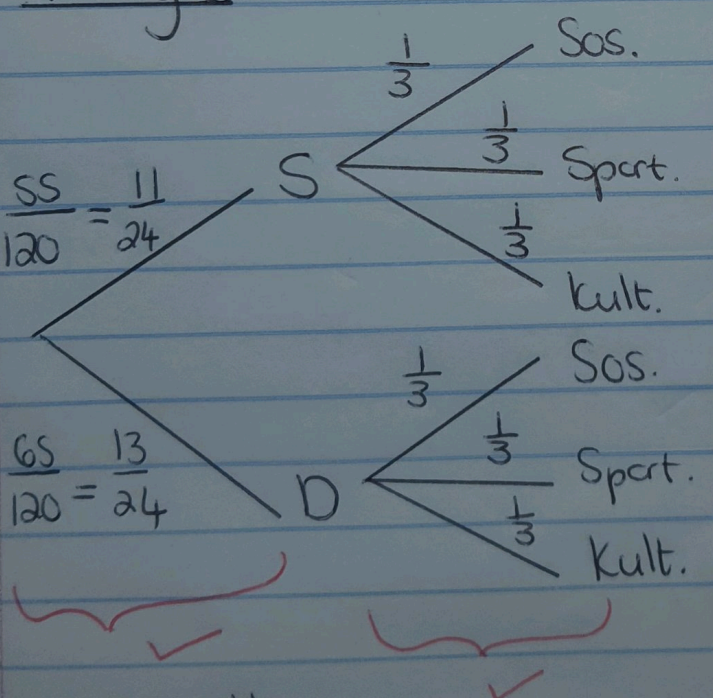
Vraag 6

6.1.1)



S. Sos.
S. Sport
S. kult.
D. Sos.
D. Sport
D. kult.

✓ 1ste vertakking
✓ 2de vertakking
✓ uitkomste
(3)

6.1.2) $P(S) = \frac{11}{24}$ ✓ ✓ (2) ✓ $\frac{11}{24}$

6.1.3) $P(D.Sos) = \frac{13}{24} \times \frac{1}{3}$ ✓

$= \frac{13}{72}$ ✓ (2) ✓ $\frac{13}{24} \times \frac{1}{3}$ ✓ $\frac{13}{72}$

Punte

6.2.1) A = 35 ✓
B = 25 ✓
C = 40 ✓
D = 50 ✓ (4)

6.2.2) $P(T) = \frac{40}{120} = \frac{1}{3}$ ✓ ✓ (2)

6.2.3) $P(S;H) = \frac{45}{70} = \frac{9}{14}$ ✓ ✓ (2)

[15]

Totaal [75]