



GRAAD 10 KABV Kurrikulum

10.4 Vergelykings en ongelykhede (B)

1. Los die vergelykings gelyktydig op.

- (a) $-9(r + 4) = r + 14$ and $r + 8e + 3 = 46$
- (b) $t - 6f - 5 = -23$ and $-5(t + 4) = t + 16$
- (c) $8(x + 7) = 2x + 80$ and $3x + 5f = -3x + 49$
- (d) $-6f - 6y = 60$ and $4f + 2y = -24$
- (e) $-4n + 4r = 8$ and $-4nr = -12$

2. Verander die onderwerp na die aangeduid letter.

- (a) $y + \frac{f}{e} = r$ (f)
- (b) $px + y = f$ (p)
- (c) $-n + (e + 3)m = x$ (e)
- (d) $\frac{f}{4}(m^2 + r) = z$ (m)

3. Los lineêre ongelykhede op.

- (a) $\frac{r}{2} > -5r - 1$
- (b) $\frac{-2y}{5} \leq 3y + 4$
- (c) $\frac{6c - 11}{5} < 7(c - 1)$
- (d) $84 > 8v - 4 > 76$
- (e) $-13 > 12f + 11 > -181$



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MEMO

1. Gelyktydige vergelykings [4.6.1.2; 4.6.1.3; 4.6.2.1; 4.6.2.2]

(a) $-9(r + 4) = r + 14 \dots(1)$
 $-9r - 36 = r + 14$
 $-9r - r = 36 + 14$
 $-10r = 50$
 $r = -5$

$r + 8e + 3 = 46 \dots(2)$
 $(-5) + 8e + 3 = 46$
 $8e = 46 - 3 + 5$
 $8e = 48$
 $e = 6$

(b) $-5(t + 4) = t + 16 \dots(1)$
 $-5t - 20 = t + 16$
 $-5t - t = 16 + 20$
 $-6t = 36$
 $t = -6$

$t - 6f - 5 = -23 \dots(2)$
 $(-6) - 6f - 5 = -23$
 $-6f = -23 + 6 + 5$
 $-6f = -12$
 $f = 2$

(c) $8(x + 7) = 2x + 80 \dots(1)$
 $8x + 56 = 2x + 80$
 $8x - 2x = -56 + 80$
 $6x = 24$
 $x = 4$

$3x + 5f = -3x + 49 \dots(2)$
 $3(4) + 5f = -3(4) + 49$
 $12 + 5f = -12 + 49$
 $5f = -12 + 49 - 12$
 $5f = 25$
 $f = 5$

(d) $-6f - 6y = 60 \dots(1)$
 $-f - y = 10$
 $-y = 10 + f$
 $y = -10 - f$

$4f + 2y = -24 \dots(2)$
 $4f + 2(-10 - f) = -24$
 $4f - 20 - 2f = -24$
 $2f = 20 - 24$
 $2f = -4$
 $f = -2$

(e) $-4n + 4r = 8 \dots(1)$
 $n - r = -2$
 $n = r - 2$

$-4nr = -12 \dots(2)$
 $-4(r - 2)r = -12$
 $-4r + 8r = -12$
 $4r = -12$
 $r = -3$

2. Vergelykings met letter koeffisiente. [4.2.4.1; 4.2.4.2; 4.2.4.3]

(a) $y + \frac{f}{e} = r \dots\dots\dots (f)$



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$$y + \frac{f}{e} = r$$

$$ey + f = er$$

$$f = er - ey$$

(b) $px + y = f$ (p)

$$px + y = f$$

$$px = f - y$$

$$p = \frac{f - y}{x}$$

(c) $-n + (e + 3)m = x$ (e)

$$-n + (e + 3)m = x$$

$$-n + em + 3m = x$$

$$em = n - 3m + x$$

$$e = \frac{n - 3m + x}{m}$$

(d) $\frac{f}{4}(m^2 + r) = z$ (m)

$$\frac{f}{4}(m^2 + r) = z$$

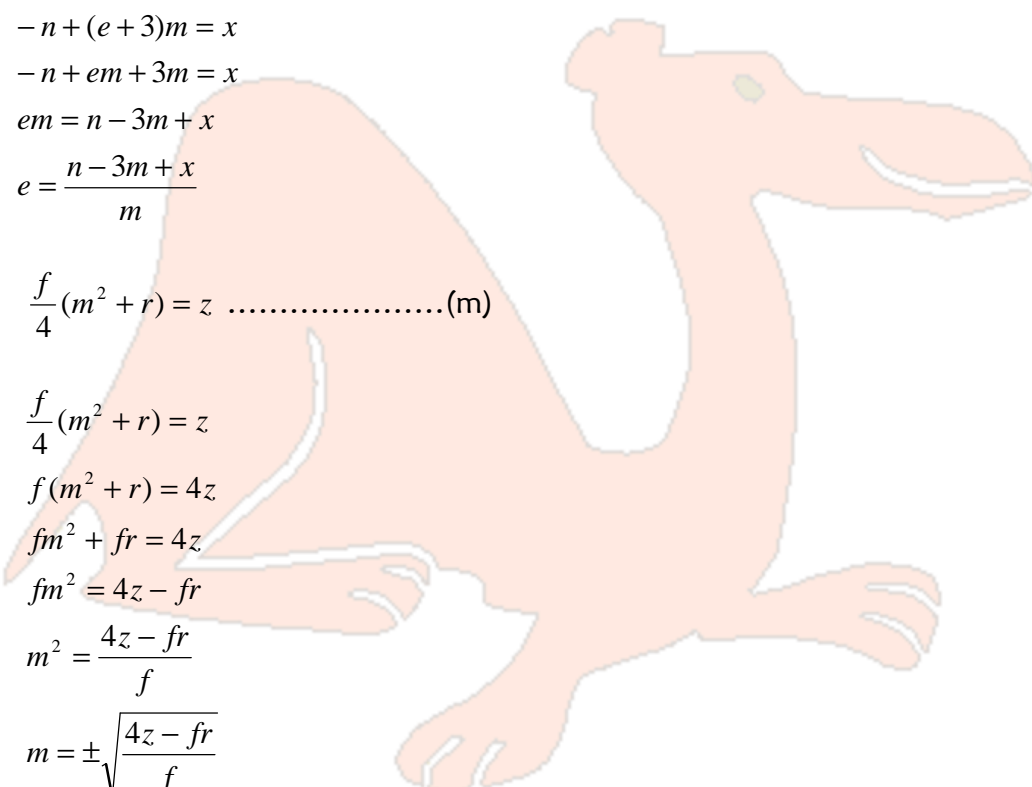
$$f(m^2 + r) = 4z$$

$$fm^2 + fr = 4z$$

$$fm^2 = 4z - fr$$

$$m^2 = \frac{4z - fr}{f}$$

$$m = \pm \sqrt{\frac{4z - fr}{f}}$$





3. Lineêre ongelykhede. [5.3.1.1; 5.3.1.4]

(a)

$$\frac{r}{2} > -5r - 1$$

$$r > -10r - 2$$

$$11r > -2$$

$$r > \frac{-2}{11}$$

(b)

$$\frac{-2y}{5} \leq 3y + 4$$

$$-2y \leq 15y + 20$$

$$-2y - 15y \leq 20$$

$$-17y \leq 20$$

$$y \geq \frac{-20}{17}$$

(c)

$$\frac{6c - 11}{5} < 7(c - 1)$$

$$6c - 11 < 35(c - 1)$$

$$6c - 11 < 35c - 35$$

$$6c - 35c < 11 - 35$$

$$-29c < -24$$

$$c > \frac{24}{29}$$

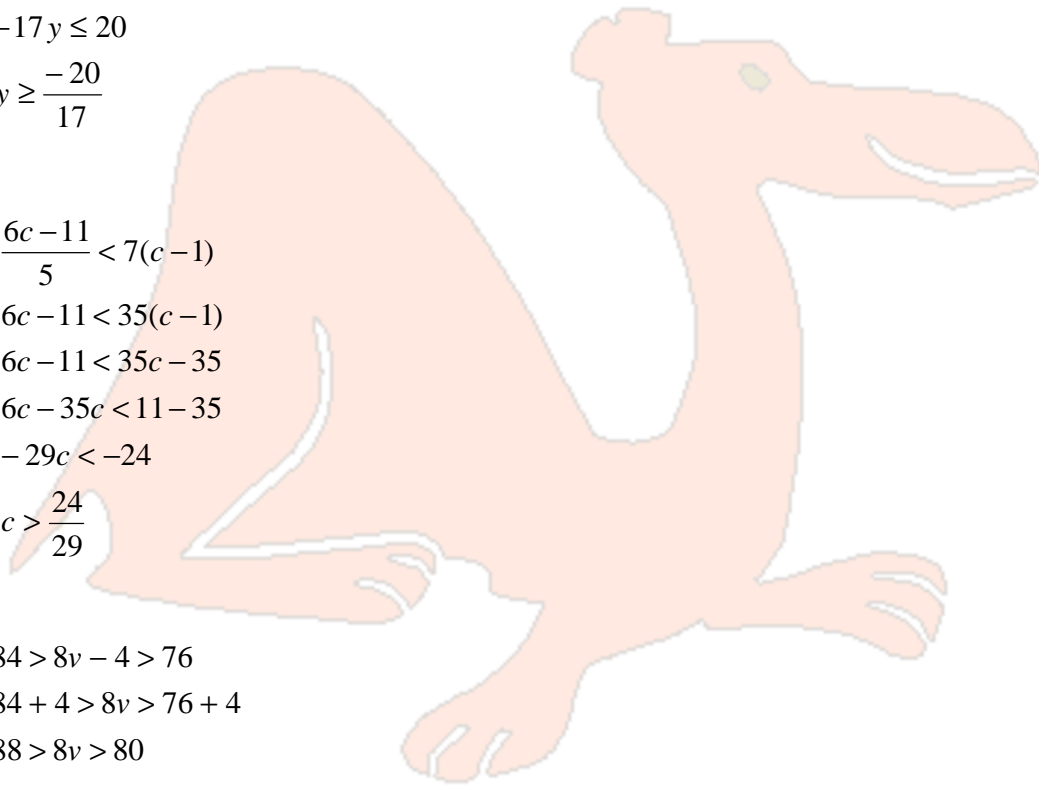
(d)

$$84 > 8v - 4 > 76$$

$$84 + 4 > 8v > 76 + 4$$

$$88 > 8v > 80$$

$$11 > v > 10$$





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(e)

$$-13 > 12f + 11 > -181$$

$$-13 - 11 > 12f > -181 - 11$$

$$-24 > 12f > -192$$

$$-12 > f > -16$$

