

JUST NUMBERS

INGRID DU TOIT

WEEKLY EXERCISES FOR GRADE 9

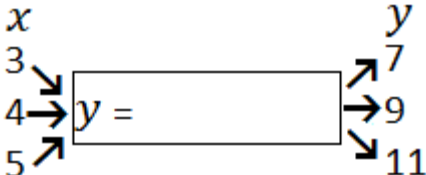
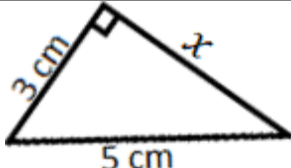
| | | |
|--------|------|---------|
| Term 1 | ▶ | 1 – 13 |
| Term 2 | ▶▶ | 14 – 26 |
| Term 3 | ▶▶▶ | 27 – 39 |
| Term 4 | ▶▶▶▶ | 40 – 52 |

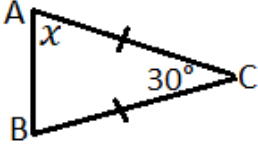
See www.abcmathsandscience.co.za for more

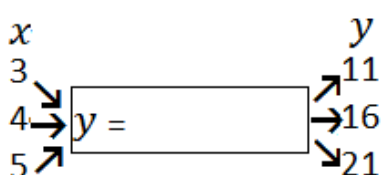
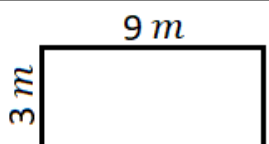
Please note:


- The answers in the middle of the book can be removed.
- You may not use a calculator.
- Give answers with positive exponents.
- Simplify unless otherwise indicated.

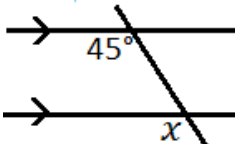
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| | |
|--|---|
| a) $9,3 \times 10^5$ | m) $a \times a \times a \times a \times a$ |
| b) $(-4)^3 - (-3)^2$ | n) $2a^2 \times (-3a^2)^3$ |
| c) $\frac{4}{3} + \frac{2}{3} \times \frac{7}{8}$ | o) $4x^2 \times x \times 5x^3$ |
| d) $\sqrt{1,21}$ | p) $3x(2x - 4) - x$ |
| e) $0,15 = \frac{\square}{\square}$ | q) $\frac{a^{10}}{a^5}$ |
| f) $a = 2; b = -1$ $\rightarrow 3a^a - 2ab - b^2 =$ | r) $\frac{x}{y} \div \frac{x^3}{y^3}$ |
| g) $4(abc)^0$ | s) $-2x^3 + 5x^2 - 3x^3 + x^2$ |
| h) $\frac{6x^2 - 15x}{3x}$ | t) 3; 5; 7; 9; $T_n =$ |
| <i>Solve x:</i> | u)  |
| i) $x - 5 = 30$ | v)  |
| j) $\frac{x}{-7} = 3$ | $x = \dots\dots\dots$ (why?) |
| k) $5x - 4 = 8 - x$ | |
| l) $3x^2 = 48$ | |

| | | | | | | | | | |
|---|---|----|----|---|---|---|---|----|----|
| a) $10^0 - 1^{10}$ | m) $5b(-b^2 - 2b - 5)$ | | | | | | | | |
| b) $\frac{-4+(-5)(-4)}{(2)(-2)}$ | n) $\frac{2x^4+x^3}{x^2} + 3x^2$ | | | | | | | | |
| c) $\frac{2}{3} \times 26\frac{5}{8}$ | o) $\frac{-3x(2x-3)}{-x}$ | | | | | | | | |
| d) $\sqrt{\frac{16}{25} + 0,36}$ | p) $7x - y - (x - 3y) - y$ | | | | | | | | |
| e) $\frac{-3}{8} = \dots 0, \dots$ | q) $2a^2b \times (-5ab^2) \times (-ab)^3$ | | | | | | | | |
| f) $a^3 \times a^3$ | r) $x^2 - 2 - 5x + 3 - 3x^2$ | | | | | | | | |
| g) $\frac{(2x^2)^2 \times 2y^2}{4yx^3}$ | s) $m = -2; n = 4$ $\rightarrow mn + 2mn + 3m =$ | | | | | | | | |
| h) $\sqrt[3]{125x^{15}}$ | t) $T_n = 4n - 3$ $T_{25} = \dots$ | | | | | | | | |
| <i>Solve x:</i> | u) <table border="1" style="display: inline-table; vertical-align: middle;"> <tbody> <tr> <td>x</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td>7</td> <td>10</td> <td>13</td> </tr> </tbody> </table> $y = \dots$ | x | 1 | 2 | 3 | y | 7 | 10 | 13 |
| x | 1 | 2 | 3 | | | | | | |
| y | 7 | 10 | 13 | | | | | | |
| i) $14 - 4x = 7x - 8$ | v)  $x = \dots^\circ$ (why?) | | | | | | | | |
| j) $\frac{1}{5}x = 20$ | | | | | | | | | |
| k) $6(x - 2) = 3(x + 8)$ | | | | | | | | | |
| l) $3x = 21$ | | | | | | | | | |

| | |
|--|--|
| a) $42 \div (-6) \times (-2)$ | m) $-3x - 3x - 3x$ |
| b) $1\frac{7}{8} \times \frac{4}{5} - \frac{1}{6}$ | n) $(-3a)(-3a)(-3a)$ |
| c) $(0,01)^3$ | o) $(-2x^3)^2$ |
| d) $\sqrt{1\frac{2}{25} + \frac{36}{100}}$ | p) $\sqrt[3]{27a^{27}}$ |
| e) $8,5\% = \frac{\square}{\square}$ | q) $4a^2 - 2a(-4a^2 + 2a)$ |
| f) $x(8x + 2)$ | r) $2x^2 + 3x^2 \times -2x$ |
| g) $\frac{-48a^6b^6}{36a^3b^9}$ | s) $a = 2; b = -4; c = 5$ $\rightarrow 2a - b + 3c =$ |
| h) $\frac{2a^2 - 6a^3}{2a}$ | t) $1; 4; 9; 16; \dots$ $T_n = \dots\dots\dots$ |
| <i>Solve x:</i> | u)  |
| i) $-2x - 1 = 13$ | v)  |
| j) $2(4x + 2) = 12$ | Area = $\dots\dots\dots$ |
| k) $\frac{4x}{5} = -8$ | |
| l) $x - 7 = -x + 1$ | |

| | | | | | | | | | |
|---------------------------------------|--|-----|------|-----|-----|-----|--|--|--|
| a) $-11 - (3 - 7)$ | m) $\frac{12x^6}{25y} \div \frac{24y^4}{-5x^5}$ | | | | | | | | |
| b) $-1\frac{1}{2} + 2\frac{1}{7}$ | n) $\sqrt{25a^{10} - 9a^{10}}$ | | | | | | | | |
| c) $2 \times 2^3 \times 2^6$ | o) $a^2 - 9a + 3a^2 + 4a$ | | | | | | | | |
| d) $\sqrt{8^2 + 6^2}$ | p) $\frac{1}{3}a + \frac{4}{5}a - 1\frac{2}{3}a$ | | | | | | | | |
| e) $-0,125 = \frac{\square}{\square}$ | q) $4x(x + 2x - 3y)$ | | | | | | | | |
| f) $-2(2a^3b^4)^2$ | r) $x + x \times x - x$ | | | | | | | | |
| g) $(2a^3)(-4a^3)$ | s) $a = -8;$ $\rightarrow \left(\frac{3a}{4}\right)^2 =$ | | | | | | | | |
| h) $\frac{9a^4 - 6a}{3a^2}$ | t) $-13; -2; 9; \dots$ $T_n = \dots\dots\dots$ | | | | | | | | |
| <i>Solve x:</i> | u) $y = x^2 - 3$ | | | | | | | | |
| i) $-2x + 2 = -4$ | <table border="1" style="display: inline-table; vertical-align: middle;"> <tbody> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">-1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">7</td> </tr> <tr> <td style="padding: 5px;">y</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </tbody> </table> | x | -1 | 2 | 7 | y | | | |
| x | -1 | 2 | 7 | | | | | | |
| y | | | | | | | | | |
| j) $2x - 6 = 2(3 - 5x)$ | | | | | | | | | |
| k) $\frac{x-2}{4} - 4 = 0$ | v)  | | | | | | | | |
| l) $x^2 = 64$ | $x = \dots\dots\dots^\circ$ (why?) | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|----|----|----|--|----|---|----|--|----|----|----|
| a) $(3^2)^5$ | m) $-2xy + 3x + 4 + 4xy - x$ | | | | | | | | | | | | |
| b) $(\frac{2}{3} + \frac{4}{3}) \times \frac{7}{8}$ | n) $3x(2x - 5)$ | | | | | | | | | | | | |
| c) $\sqrt{1764}$ | o) $(-5a)(2a)(-3)$ | | | | | | | | | | | | |
| d) $-(13 + 6 - 7) - 8$ | p) $(4x^3)^2(2y^4)$ | | | | | | | | | | | | |
| e) $\frac{12}{25} = 0, \dots\dots\dots$ | q) $4xy^2 \div \frac{-4xy^2}{2x^2y}$ | | | | | | | | | | | | |
| f) $\sqrt[3]{\frac{250x^{14}}{2x^2}}$ | r) $6x^0 + 6(x - 1)$ | | | | | | | | | | | | |
| g) $\frac{a^3bc^6}{a^2bc}$ | s) $-6; 12; -24; \dots\dots; -96; 192$ | | | | | | | | | | | | |
| h) $\frac{6x^3 - x^2}{x^2}$ | t) $a = -1; b = 2; c = -3$ $\rightarrow 2abc =$ | | | | | | | | | | | | |
| Solve x: | u) Complete (direct proportion) | | | | | | | | | | | | |
| i) $2x + 4 = x + 8$ | <table border="1"> <tbody> <tr> <td>x</td> <td>3</td> <td>5</td> <td>8</td> <td></td> <td>12</td> </tr> <tr> <td>y</td> <td>18</td> <td></td> <td>48</td> <td>54</td> <td>72</td> </tr> </tbody> </table> | x | 3 | 5 | 8 | | 12 | y | 18 | | 48 | 54 | 72 |
| x | 3 | 5 | 8 | | 12 | | | | | | | | |
| y | 18 | | 48 | 54 | 72 | | | | | | | | |
| j) $\sqrt{x} + 1 = 11$ | | | | | | | | | | | | | |
| k) $\frac{x}{3} = 9$ | v)  | | | | | | | | | | | | |
| l) $2x^2 = 32$ | $x = \dots\dots\dots^\circ$ (why?) | | | | | | | | | | | | |

