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051PP17F2030.

No. :
Date :

Intensive Mathematics (PBM1035) Self-Exercise 5

1. Solve each problem

a) $(8 \times 10^3) \times (3.5 \times 10^3)$
$= 800 \times 3500$ ✓ $8000 + 3500$
$= 2800000$ ✗ $= 11500$
$= 2.8 \times 10^6$ ✗ $= 1.15 \times 10^4$

b) $(4.5 \times 10^0) \div (3 \times 10^1)$
$= 4.5 \div 30$ $\frac{4.5 \times 10^0}{3 \times 10^1}$
$= 0.15$ $= 1.5 \times 10^{0-1}$
$= 1.5 \times 10^{-1}$ ✓ $= 1.5 \times 10^{-1}$

c) $(8 \times 10^1) \times (6 \times 10^5)$
$= 80 \times 600000$
$= 48000000$
$= 4.8 \times 10^7$ ✓

d) $(2.5 \times 10^1) \div (2.5 \times 10^1)$
$= 25 \div 25$
$= 1$ ✓

e) $(5 \times 10^{-2}) \div (1 \times 10^2)$
$= 0.05 \div 100$
$= 5 \times 10^{-4}$ ✓
$\frac{5 \times 10^{-2}}{1 \times 10^2} = 5 \times 10^{-2-2} = 5 \times 10^{-4}$

f) $(3 \times 10^{-6}) \times (5 \times 10^4)$
$= 0.000003 \times 50000$ ✓
$= 0.15$ ✗ 0.15
$= 1.5 \times 10^{-2}$ ✗ 1.5×10^{-1}

g) $(5 \times 10^{-2}) \div (5 \times 10^1)$
$= 0.05 \div 50$
$= 1 \times 10^{-3}$ ✓
$\frac{5 \times 10^{-2}}{5 \times 10^1} = 1 \times 10^{-2-1} = 1 \times 10^{-3}$

h) $(1.5 \times 10^{-5}) \div (3 \times 10^6)$
$= 0.000015 \div 3000000$
$= 5 \times 10^{-12}$ ✓
$\frac{1.5 \times 10^{-5}}{3 \times 10^6} = \frac{1.5}{3} \times 10^{-5-6}$
$= 0.5 \times 10^{-11}$

i) $(1.5 \times 10^4) \div (1 \times 10^6)$
$= 15000 \div 1000000$ $\frac{1.5 \times 10^4}{1 \times 10^6}$
$= 0.015$ $= 1.5 \times 10^{4-6}$
$= 1.5 \times 10^{-2}$ ✓ $= 1.5 \times 10^{-2}$

j) $(9 \times 10^8) \div (3 \times 10^{-7})$
$= \frac{9 \times 10^8}{3 \times 10^{-7}}$
$= \frac{9}{3} \times 10^{8-(-7)}$
$= 3 \times 10^{15}$ ✓

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Solve the following questions based on BODMAS rule.

a) $(9+43-4) \div 24-4$

$= 48 \div 24 - 4$

$= 2 - 4$

$= -2$ ✓

b) $(16-2)+(7-8 \div 2)$

$= (14) + (0.5)$ ✗

$= 14.5$ ✗

7-4

$14 + (7-4)$

$= 14 + 3$

$= 17$

c) $(10+26-6) \div 10-2$

$= 30 \div 10 - 2$

$= 3 - 2$

$= 1$ ✓

d) $(9+44-5) \div (9-7)$

$= 48 \div 2$

$= 24$ ✓

e) $(8+3)+(8+16 \div 4)$

$= 11 + 6$

$= 17$ ✓

f) $(8+46-6) \div (1+3)$

$= 48 \div 4$

$= 12$ ✓

g) $9 \times (4 \times 10 - 4) + 5$

$= 36 \times 9 + 5$

$= 324 + 5$

$= 329$ ✓

h) ~~$3 \times (9 \times 3 + 9) - 4$~~

~~$= 36 \times 3 - 4$~~

$3 \times 36 - 4$

$= 108 - 4$

$= 104$ ✓

$= 104$

~~$3 * 36 - 4$~~

i) $(17+5) \times (12+2) + 5$

$= 22 \times 14 + 5$

$= 308 + 5$

$= 313$ ✓

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3. Find the percentage of increase / decrease for each of the following

original number	New number	Percentage Change	Increase / Decrease
40	90	125% ✓	✓ Increase
60	70	16.7% ✓	✓ Increase
95	20	79.1% 78.9%	✓ Decrease.
150	140	6.76% ✓	✓ Decrease.
110	125	13.7% ✓	✓ Increase.
165	140	15.1% ✓	✓ Decrease.
155	80	48.3% ✓	✓ Decrease.
170	200	17.7% ✓	✓ Increase.