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Chapter 2 - check point 5

Find the value of each expression in lowest terms.

1 a) $(8 \times 10^3) \times (3.5 \times 10^3)$

$$= (8 \times 3.5) \times (10^{3+3})$$

$$= 28 \times 10^6 = 2.8 \times 10^1 \times 10^6$$

$$= 2.8 \times 10^7$$

(1) $(5 \times 10^{-2}) \div (1 \times 10^2)$

$$= (5 \div 1) \times (10^{-2-2})$$

$$= 5 \times 10^{-4}$$

b) $(4.5 \times 10^0) \div (3 \times 10^1)$

$$= (4.5 \div 3) \times (10^{0-1})$$

$$= 1.5 \times 10^{-1}$$

(J) $(1.5 \times 10^4) \div (1 \times 10^6)$

$$= (1.5 \div 1) \times (10^{4-6})$$

$$= 1.5 \times 10^{-2}$$

c) $(8 \times 10^1) \times (6 \times 10^5)$

$$= (8 \times 6) \times (10^{1+5})$$

$$= 48 \times 10^6 = 4.8 \times 10^1 \times 10^6 = 4.8 \times 10^7$$

d) $(3 \times 10^{-6}) \times (5 \times 10^4)$

$$= (3 \times 5) \times (10^{-6+4})$$

$$= 15 \times 10^{-2} = 1.5 \times 10^1 \times 10^{-2}$$

$$= 1.5 \times 10^{-1}$$

e) $(2.5 \times 10^1) \div (2.5 \times 10^1)$

$$= (2.5 \div 2.5) \times (10^{1-1})$$

$$= 1 \times 10^0 = 1 \times 1 = 1$$

f) $(1.5 \times 10^{-5}) \div (3 \times 10^{-7})$

$$= (1.5 \div 3) \times (10^{-5-(-7)}) = 0.5 \times 10^{-5+7}$$

$$= 0.5 \times 10^{-12} \times 10^{15}$$

$$= 5 \times 10^1 \times 10^2$$

$$= 5 \times 10^3$$

g) $(9 \times 10^8) \div (3 \times 10^{-7})$

$$= (9 \div 3) \div (10^{8-(-7)}) = 3 \times 10^{8+7}$$

$$= 3 \times 10^{15}$$

b) $(5 \times 10^{-2}) \div (5 \times 10^1)$

$$= (5 \div 5) \times (10^{-2-1})$$

$$= 1 \times 10^{-3}$$

Ainng
If you not sure,
please come to
me!

Thanks. 12/9/18

solve the following questions based on BODMAS rule.

2 a) $(9 + 48 - 4) \div 24 - 4$

$$= (9 + 39) \div 24 - 4$$

$$= 48 \div 24 - 4$$

$$= 2 - 4$$

$$= -2$$

g) $9 \times (4 \times 16 - 4) + 5$

$$= 9 \times (40 - 4) + 5$$

$$= 9 \times 36 + 5$$

$$= 324 + 5$$

$$= 329$$

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

$$= (14) + (7 - 4)$$

$$= 14 + 3$$

$$= 17$$

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

$$= 3 \times (27 + 9) - 4$$

$$= 3 \times 36 - 4$$

$$= 108 - 4$$

$$= 104$$

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

$$= (10 + 20) \div 10 - 2$$

$$= 30 \div 10 - 2$$

$$= 3 - 2$$

$$= 1$$

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

$$= (22) \times (14) + 5$$

$$= 22 \times 14 + 5$$

$$= 308 + 5$$

$$= 313$$

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

$$= (9 + 39) \div (2)$$

$$= 48 \div 2$$

$$= 24$$

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

$$= 11 + (8 + 4)$$

$$= 11 + 12$$

$$= 23$$

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

$$= (8 + 40) \div (4)$$

$$= 48 \div 4$$

$$= 12$$

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	16.66% ✓	✓ Increase
95	20	-78.95% ✓	✓ decrease
150	140	-7.14% ✓	✓ decrease
110	125	13.64% ✓	✓ Increase
165	140	-15.15% ✓	✓ decrease
155	80	-48.39% ✓	✓ decrease
170	200	✓ 17.65% ✓	✓ Increase

$$\frac{\text{New value} - \text{old value}}{\text{old value}} \times 100\%$$

$$\begin{aligned} \text{a) } & \frac{90 - 40}{40} \times 100\% \\ & = 125\% \end{aligned}$$

$$\begin{aligned} \text{g) } & \frac{80 - 155}{155} \times 100\% \\ & = -48.39\% \end{aligned}$$

$$\begin{aligned} \text{b) } & \frac{70 - 60}{60} \times 100\% \\ & = 16.66\% \end{aligned}$$

$$\begin{aligned} \text{h) } & \frac{200 - 170}{170} \times 100\% \\ & = 17.65\% \end{aligned}$$

$$\begin{aligned} \text{c) } & \frac{20 - 95}{95} \times 100\% \\ & = -78.95\% \end{aligned}$$

$$\begin{aligned} \text{d) } & \frac{140 - 150}{150} \times 100\% \\ & = -7.14\% \end{aligned}$$

$$\begin{aligned} \text{e) } & \frac{125 - 110}{110} \times 100\% \\ & = 13.64\% \end{aligned}$$

$$\begin{aligned} \text{f) } & \frac{140 - 165}{165} \times 100\% \\ & = -15.15\% \end{aligned}$$