

# WORKING & ANSWERS FOR PLE 2016

1	$\begin{array}{r} 594740 \\ \phantom{0} \downarrow \\ \hline 595000 \end{array}$	2	Five hundred forty thousand, thirty two																		
4	$\frac{39 \times (82 + x)}{39} = \frac{39 \times 100}{39}$ $x = 100 - 82$ $x = 18$	5	$\begin{array}{r} 2.4263 \\ + 3.0200 \\ \hline 5.4463 \end{array}$																		
7	$\frac{5 \div 5}{100 \div 5} = \frac{1}{20}$	8	$= \frac{a \times a \div b}{c - d} = \frac{3 \times 3 \div -3}{2 - 5}$ $= \frac{9 \div -3}{-3} = \frac{-3}{-3} = 1$																		
10	$C = \pi D$ $C = 3.14 \times (5 \times 2)$ $C = 3.14 \times 10cm$ $C = 31.4cm$	11	$= 1 + \frac{1}{5}$ $= 100\% + \left(\frac{1}{5} \times 100\%\right)$ $= 100\% + 20\%$ $= 120\%$																		
13	$k = 180^\circ - 70^\circ$ $= 110^\circ$	14	$3x + 6 = 21$ $3x = 21 - 6$ $\frac{3x}{3} = \frac{15}{3}$ $x = 5$																		
16	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td>2</td><td>112</td><td>168</td></tr> <tr><td>2</td><td>56</td><td>84</td></tr> <tr><td>2</td><td>28</td><td>42</td></tr> <tr><td>7</td><td>14</td><td>21</td></tr> <tr><td>2</td><td>3</td><td></td></tr> </table> $= 2 \times 2 \times 2 \times 7$ $= 56$	2	112	168	2	56	84	2	28	42	7	14	21	2	3		17	$= \frac{4 + 6 + 8 + 10}{4}$ $= \frac{28}{4}$ $= 7$			
2	112	168																			
2	56	84																			
2	28	42																			
7	14	21																			
2	3																				
19	<p>(a). Hundreds</p> <p>(b). Hundredths</p>	20	$5 \text{ bottles} = 4000F$ $1 \text{ bottle} = \frac{4000}{5} F$ $3 \text{ bottles} = \frac{4000 \times 3}{5}$ $= 2,400F$																		
3	$5 \div 11 = 0.45 < 0.677$ $\text{Therefore; } \frac{5}{11} < 0.677$	6	$2 \times 2 = 4$ $4 \times 4 = 16$ $16 \times 16 = 256$ $256 \times 256 = 65,536$ $2; 4; 16; 256; 65536$																		
9	$(a) = \frac{43,000}{1000} = 43kg$ $(b) = \frac{55}{10} \times 1000$ $= 5500kg$	12	$= \left(\frac{84 \times 100}{2}\right) - 84$ $= 4200 - 84$ $= 4116$																		
15	<table style="margin: auto;"> <tr><td>8</td><td>3</td><td>5</td><td>8</td><td>7</td><td>9</td></tr> <tr><td colspan="3" style="border-top: 1px solid black;"></td><td colspan="3" style="border-top: 1px solid black;"></td></tr> <tr><td colspan="3" style="border-bottom: 1px solid black;"></td><td colspan="3" style="border-bottom: 1px solid black;"></td></tr> </table> $8 + 5 + 7 = 3 + 8 + 9$ $20 = 20$ <p>The sum of numbers in even places should be equal to the sum of numbers in odd places</p>	8	3	5	8	7	9													18	$P = SP - CP$ $P = 7200 - 6000$ $P = 1200Fw$ $P = \frac{P \times 100}{cp} = \frac{1200 \times 100}{6000}$ $= 20\%$
8	3	5	8	7	9																
21	$LCD = 24$ $\frac{3}{8} \times 24 = 9 \dots 2^{nd}$ $\frac{1}{4} \times 24 = 6 \dots 3^{rd}$ $\frac{5}{12} \times 24 = 10 \dots 1^{st}$ $\text{Order} = \frac{5}{12}; \frac{3}{8}; \frac{1}{4}$																				

<p>22</p> <p>Seventy five and twenty seven hundredths</p> <p>Or: Seventy five point two seven</p>	<p>23</p> <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>2</td><td>624</td><td>208</td></tr> <tr><td>2</td><td>312</td><td>104</td></tr> <tr><td>2</td><td>156</td><td>52</td></tr> <tr><td>2</td><td>78</td><td>26</td></tr> <tr><td>3</td><td>39</td><td>13</td></tr> <tr><td>13</td><td>13</td><td>13</td></tr> <tr><td></td><td>1</td><td>1</td></tr> </table> <p style="margin-left: 20px;">= 16 × 3 × 13 = 624</p>	2	624	208	2	312	104	2	156	52	2	78	26	3	39	13	13	13	13		1	1	<p>24</p> <p>4S = 164m S = (164 ÷ 4)m S = 41m A = S × S A = 41m × 41m A = 1,681m<sup>2</sup></p>
2	624	208																					
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	1	1																					
<p>25</p> $\begin{array}{r} 6.000 \\ - 2.174 \\ \hline 3.826 \end{array}$	<p>26</p> <p>Hint: First reduce all fractions to the lowest terms then use BODMAS</p> $= \frac{3}{4} \times \frac{2}{3} + \frac{1}{2}$ $= \frac{1}{2} + \frac{1}{2} = \frac{1+1}{2} = \frac{2}{2} = 1$	<p>27</p> <p>Side b = (15m + 6m) = 21m</p> $A = \frac{h(a+b)}{2}$ $= \frac{8(15+21)}{2} m^2$ $= (4 \times 36) m^2$ $= 144m^2$																					
<p>28</p> <p>8 guests = 1 table 1 guest = <math>\frac{1}{8}</math> table 235 guests = <math>\frac{1 \times 235}{8}</math> tables = 29 tables and 3 guest rem. = 29 + 1 = 30 tables</p>	<p>29</p> <p>(a). <math>N_i = \frac{D}{L_i} = \frac{5540m}{20m} = 277</math></p> <p>(b). <math>N_p = N_i + 1</math> = 277 + 1 = 278 poles</p>	<p>30</p> <p>Each = (4500 ÷ 15) = 300F Rest = (300 + 75) = 375F Paid = (4500 ÷ 375) = 12 children Unable to pay = 15 - 12 = 3 children</p>																					
<p>31</p> <p>TSA = <math>\pi r(r + l)</math> = 3.14 × 6 (6 + 10) = 18.84 × 16 = 301.44cm<sup>2</sup></p> <p>Note: first find the height</p> $h = \sqrt{H^2 - b^2}$ $= \sqrt{10^2 - 6^2}$ $= \sqrt{100 - 36}$ $= \sqrt{64 cm^2}$ $= 8cm$ <p>Vol = <math>\frac{1}{3} \pi r^2 h</math> = <math>\frac{3.14 \times 6 \times 6 \times 8}{3}</math> = 301.44 cm<sup>3</sup></p>	<p>32</p> <p>T = <math>\frac{\text{Product of Time}}{\text{Difference of Time}}</math></p> $= \frac{4 \times 3}{4 - 3} \text{ hrs}$ $= \frac{12}{1} \text{ hrs}$ <p>= 12 hours</p>	<p>33</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td></td><td>1<sup>st</sup></td><td>2<sup>nd</sup></td><td>mix</td></tr> <tr><td>Qty</td><td>(9-4)</td><td>4</td><td>9</td></tr> <tr><td>Px/kg</td><td>n</td><td>300</td><td>500</td></tr> </table> <p>(5 × n) + (4 × 300) = (9 × 500)</p> $5n + 1200 = 4500$ $5n = 4500 - 1200$ $\frac{5n}{5} = \frac{3300}{5}$ $n = 660F/w$ <p>Therefore the cost of the second type is 660F/ka.</p>		1 <sup>st</sup>	2 <sup>nd</sup>	mix	Qty	(9-4)	4	9	Px/kg	n	300	500									
	1 <sup>st</sup>	2 <sup>nd</sup>	mix																				
Qty	(9-4)	4	9																				
Px/kg	n	300	500																				
<p>34</p> <p>(a). D = S × T = 60km/hr × 3hr = 180km</p> <p>The distance from town A to town B is 180km.</p> <p>(b). A.S = <math>\frac{\text{Total Distance}}{\text{Total Time Taken}}</math> = <math>\frac{180km + 180km}{3hr + 2hr}</math> = <math>\frac{360km}{5hr}</math> = 72km/hr</p>	<p>35</p> <p>(a). First year</p> $I = \frac{PTR}{100} = \frac{180000 \times 1 \times 10}{100} = 18,000F/w$ <p>A = P + I = 180,000 + 18,000 = 198,000F/w</p> <p>Second year</p> $I = \frac{PTR}{100} = \frac{198000 \times 1 \times 10}{100} = 19,800F/w$ <p>Compound Interest = 18,000F + 19,800F = 37,800F/w</p> <p>(b). Amount = Principal + Compound Interest = 180,000F + 37,800F = 217,800F/w</p>																						