PERCENTAGE CHANGE

Pearson Edexcel - Tuesday 19 May 2020 - Paper 1 (Non-Calculator) Foundation Tier

1.

24	20	P1 P1 A1	for process to find SP of 24 chocolate bars, eg. 0.50 × 24 (= 12) oe **or** for process to find the overall profit eg (24 × 0.5) – 10 (=2) **or** for process to find CP of one chocolate bar, eg. 1000 ÷ 24 (= 41.66…) oe (dep) for start to a process to find percentage profit, eg. using $\frac{"12"-10}{10}$ **or** $\frac{"12"}{10}$ **or** $\frac{50-"41.66.."}{"41.66..."}$ oe with consistent units cao	Working can be carried out in either pounds or pence.

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Foundation Tier

2.

18 (a)	explanation	C1	explanation eg should be 1.03, this is 30% (not 3%) **Acceptable examples** Because 1.3 is 130% He is increasing it by 30% 1.3 means 1.30, not 1.03 He needs to put a 0 in front of the 3 1.3 is the wrong decimal He should multiply by 0.03 3% is 0.03, (not 1.3) His answer should be 154.5 He is meant to increase it by 4.5, not by 45 **Not acceptable examples** Because he is increasing by 130%, not 3% He needs to find 1% and then times it by 3	
(b)	(150 ×) 0.97 = 145.5	B1	for 0.97 (or $\frac{97}{100}$ or 97%) and 145.5	

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Foundation Tier

3.

21	260 to 260.5	M1 M1 A1	for 883 – 245 (=638) **or** 883 ÷ 245 (=3.60..) **or** 883 ÷ 245 × 100 (=360(.408..)) oe for a complete method to find the percentage increase eg "638" ÷ 245 × 100 (=260(.408..)) **or** 883 ÷ 245 × 100 − 100 (=260(.408..)) oe Accept answers in the range 260 to 260.5	

Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Foundation Tier

4.

21	30	P1 P1 P1 A1	for full process to find the number of bags sold eg 5 × 1000 ÷ 250 (= 20) **OR** for process to find selling price of 1 kg of sweets eg 0.65 × 4 (= 2.60) for [number of bags] × 0.65 **or** "20" × 0.65 (= 13) **or** "2.60" × 5 (= 13) **OR** for 10 ÷ "20" oe (= 0.50) **OR** for 0.65 × 4 (= 2.60) **and** 10 ÷ 5 (= 2) (dep on previous P1) for a process to find the percentage profit eg ("13" – 10) ÷ 10 × 100 **or** (0.65 – "0.50") ÷ "0.50" × 100 **or** ("2.60" – "2") ÷ "2" × 100 **OR** "13" ÷ 10 ×100 (= 130) oe cao	This could be by repeated addition Calculations can be in £ or pence [number of bags] can only come from 5 × 10 ÷ 250 (= 0.2) or 5 × 100 ÷ 250 (= 2) or 5 ÷ 250 (= 0.02) 3/10 or 0.3 is not enough but should be awarded 2 marks Award P3 for 130(%)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Foundation Tier

5.

25		No (supported)	P1 P1 A1	For a process to calculate the initial or new pressure, eg (70 +10) ÷ (20+10) (=2.6 to 2.7) **or** 80 ÷ 30 (=2.6 to 2.7) **or** 70 ÷ 20 (=3.5) For a complete process to make a comparison eg. 0.8 × "3.5" (=2.8) **OR** $\frac{("3.5"-"2.6")}{"3.5"}$ ×100 (=22 to 26) **OR** "3.5" × 0.2 (=0.7) **and** 80 ÷ 30 (=2.6 to 2.7) **OR** $\frac{"2.6"}{"3.5"}$ (× 100) (=0.74 to 0.78 **or** 74 to 78) for a correct conclusion supported by accurate figures eg 2.8 **and** 2.6(6…) **OR** decrease is 24% (or 22% to 26%) **OR** 0.7 **and** 2.6 to 2.7 **and** 3.5 **OR** 0.7 **and** 0.9 **OR** 0.76 (or 0.74 to 0.78) **OR** 76% (or 74% to 78%)	Accept any value in the range 2.6 to 2.7 if unsupported by working Allow truncation or rounding of figures

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Foundation Tier

6.

30		4	M1 A1	for a complete method eg 2.80 × 100 ÷ (100−30) oe **or** 2.80 ÷ 0.7 oe **or** for build up method but must show all intermediate steps unless all figures are correct eg 2.8 ÷ 7 = 0.4 and "0.40" × 10 (=4) cao

Pearson Edexcel - Monday 6 November 2017 - Paper 2 (Calculator) Foundation Tier

7.

15		988	P1 P1 P1 P1 A1	for a process to find the amount of oil bought in November, eg 750 ÷ 0.5 (=1500) or 75000 ÷ 50 (=1500) for a process to find the amount of oil ordered in February, eg "1500" +1000 − 600 (= 1900) (indep) for a process to calculate a 4% increase of their amount of oil, eg or "1900" × 1.04 (=1976) or increase in price eg 1.04 × 50 (=52 or 0.52) or 1.04 × 750 (=780) for a complete process to find the total cost of the calculated amount of oil eg "52" × "1900" or "780" × "1900" ÷ "1500" Cao

8.

17	£6 − £5.64 = 36p or 50p − 47p = 3p 6.3829787…%	6.4	P1 P1 A1	for a strategy to compare the same number of bottles e.g. £5.64 ÷ 12 (= 47 or 0.47) or 12 × 50p (= 6 or 600) or 36 or 0.36 or 3 or 0.03 for start of process to find percentage profit e.g. $\frac{"36"}{564}$ or $\frac{"3"}{"47"}$ or $\frac{"6"}{5.64}$ or $\frac{50}{"47"}$ oe with consistent units for answer in the range 6.3 to 6.4

Pearson Edexcel – Specimen 2 - Paper 1 (Non-Calculator) Foundation Tier

9.

17		35	M1 M1 A1	for method to find increase 108 – 80 (= 28) for method to find % increase eg $\frac{28}{80} \times 100$ cao

OCR – Tuesday 03 November 2020- Morning - Paper 1 (Calculator) Foundation Tier

10.

24			46.77 to 46.84 or 47 nfww or (using 9) 47.45 to 47.5 or 48 nfww	**6**	**B2** for 9, 9.9, 9.975, 9.98 or 10 or **M1** for [faulty =] $\frac{6}{80}$[×133] oe AND **M1** for [costs =] 133 × (32 + 7) + *their* 10 × 25 oe or *their* 5187 + *their* 10 × 25 **M1** for [income =] 133 × 60 **M1** for [percentage profit =] $\frac{\textit{their}\ 7980 - \textit{their}\ 5437}{\textit{their}\ 5437}$ [× 100] oe or $\left(\frac{\textit{their}\ 7980}{\textit{their}\ 5437} - 1\right)$[× 100]	equivalents include 7.5% **M1** implied by 5412, 5434.5, 5436.375, 5436.5 or 5437 **M1** implied by 7980 numerator could be e.g. 2543 accept any correct method

OCR Thursday 05 November 2020- Morning (Non-Calculator) Foundation Tier

11.

12			70	**3**	**M2** for 56 ÷ 0.8 **oe** or **B1** for 0.8[0] **oe** seen or for 56 associated with 80% **isw**	For B1 0.8 **oe** seen allow fraction but not just for 80%

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

12.

11	**(a)**		20	**3**	**M2** for $\frac{216-180}{180}$ [× 100] **oe** or **M1** for $\frac{216}{180}$ [× 100] **oe** or 216 – 180 **oe**	eg $\frac{36}{180}$ or $\frac{3600}{180}$ or 0.2 or $\frac{1}{5}$ M1 implied by 1.2 or 120 or $\frac{6}{5}$
11	**(b)**		1.17	**1**		

OCR Monday 11 November 2019 – Afternoon (Calculator) Foundation Tier

13.

18	**(a)**		2.4	**1**		
	(b)	**(i)**	Percentages are not of the same amount oe	**1**	If calculation used 10% of 1500 = 150 80% of 1650 = 1320 1500 – 150 = 1350 It has lost more [than 10%]	If calculation, must contain all four steps Accept anything that suggests 20% is of a different amount [than 1500]
		(ii)	12 nfww	**5**	**M3** for $1500\times\left(1-\left(1+\frac{10}{100}\right)\left(1-\frac{20}{100}\right)\right)$ oe possibly implied by 180 or **M2** for $1500\times\left(1+\frac{10}{100}\right)\times\left(1-\frac{20}{100}\right)$ oe possibly implied by 1320 or **M1** for $\times\left(1+\frac{10}{100}\right)$ oe possibly implied by 1650 AND **M1** for $\frac{\textit{their}\ 180}{1500}$ [× 100] oe	If non calculator methods, must show operations to score method marks **M3** for 1500 × (1 – 1.1 × 0.8) May be in stages e.g 1500 ÷ 10 = 150 **M1** 1500 + 150 = 1650 1650 ÷ 10 × 2 = 330 **M2** 1650 – 330 = 1320 **M3** 1500 – 1320 = 180 **M1** 180 ÷ 1500 × 100 = 12 ALTERNATIVE **not using 1500** **B1** for 1.1 or 110% **B1** for 0.8 or 80% **M1** for 1.1 × 0.8 soi 0.88 **M1** for (1 – *their* 0.88) × 100

14.

20			31218	**5**	**M4** for $54868-\frac{54868}{2.32}$ oe or **M3** for $\frac{54868}{2.32}$ soi by 23650 or 236.5 or **M2** for 2.32 or 232[%] soi or **M1** for 1.32 or 132[%] soi If **M1** only scored then also allow an **SC1** for $\frac{54868}{1.32}$ soi by 41566 to 41567	May be seen as $54868\times\frac{132}{232}$ or 236.5 × 132 Examples of implied: 2.32 implied by [A =] 0.32B + 2B oe but not by 32[%] × B + 2B oe 1.32 implied by 0.32 + 1 but not by 32[%] + 1 nor 0.32 + 100[%]

OCR Thursday 6 June 2019 – Morning (Non-Calculator) Foundation Tier

15.

15	**(a)**		40	**3**	**M2** for $\frac{1.68-1.20}{1.20}$ [× 100] **oe** or **M1** for $\frac{1.68}{1.20}$ **oe** or for 1.68 – 1.20 **oe**	eg $\frac{48}{1.20}$ or $\frac{48}{120}$ or 0.4 For M1 accept 168 – 120 **oe** eg 48 M1 implied by 1.4 or 140
	(b)		450	**3**	**M2** for 360 ÷ 0.8 **oe** or **B1** for 0.8[0] **oe** seen or for 360 associated with 80% **isw**	For B1 0.8 oe seen allow fraction but not just for 80%

16.

18			173.4[0]	**6**	**M1** for evidence at some stage of intention to find the total ticket cost of 2 adults + 1 child (eg **soi** by 200 or 170) AND **M2** for complete method to reduce any valid ticket price or combination by 15% (eg full attempt at 85% or 100% – 15%) **isw** or **M1** for complete method to find 15% of a valid ticket price or combination **isw** AND **M2** for complete method to increase *their* valid ticket price or combination by 2% or **M1** for complete method to find 2% of *their* valid ticket price or combination	This may be at the start or later if calculating individual ticket prices and payments even if errors in the prices Working with just an individual ticket price will be M2M2max) Valid ticket price combinations are eg 40, 80, 120, 160, 200 "Complete method" means it would lead to a correct answer if not for arithmetic slips M2 may be implied by eg 170, 34, 68, 102, 136 M1 may be implied by 30, 6, 12, 18, 24 May be from an original "valid ticket price or combination" or from a calculated sale price. The 2% increase and the 15% decrease can be done in either order but if the 15% decrease is done first with the original price then the 2% increase must be done with *their* sale price and vice versa

OCR Thursday 8 November 2018 – Morning (Non-Calculator) Foundation Tier

17.

18			2000	3	**M2** for 2400 ÷ $\frac{100+20}{100}$ oe or **M1** for 1.2(0) **oe seen** or for 2400 associated with 120[%]	

OCR Monday 12 November 2018 – Morning (Calculator) Foundation Tier

18.

8	(a)		50	2	**M1** for 18 × 2 soi 36	
	(b)		9.3[0]	4	**B3** for answer 59.3 only or **B1** for 3.6 or 7.2 or 21.6 or 43.2 **B1** for 2.1 or 16.1 **M1** for 2 *their* adult cost + *their* child cost	No FT from *their* (a) If total cost and increase given, ignore total and mark only increase May be increase or total

OCR Monday 24 May 2018 – Morning (Calculator) Foundation Tier

19.

3	(a)		24	1		
	(b)		20	1		
	(c)		390	3	**M2** for [0].6 × 650 oe Or **M1** for [0].4 × 650 oe implied by 260	

20.

17			222	5	**M4** for 750 × [0].8 × [0].88 oe or 528 Or **M2** for 750 × [0].8 soi by 600 Or **M1** for 750 × [0].2 implied by 150 and **M1** for *their* 600 ×[0.] 88 or *their* 600 × [0].12 implied by 72	Accept equivalent methods e.g finding 20% and subtracting.

OCR Tuesday 12 June 2018– Morning (Calculator) Foundation Tier

21.

15			20	4	**M2** for $500 \times \frac{100+25}{100}$ oe soi 625 or **M1** for $500 \times \frac{25}{100}$ oe soi 125 AND **M1** for $([1 -] \frac{500}{\textit{their } 625})$ [× 100] oe soi [0].8 or 80 or [0].2 or 20	See AG for alternative methods 625 – 500 = 125 followed by $\frac{125}{625}$[×100] scores **M2** AND **M1**

OCR Thursday 2 November 2017– Morning (Calculator) Foundation Tier

22.

10	**(a)**		12.4	**3**	**M2** for 62 ÷ 500 × 100 oe OR **M1** for 62 ÷ 500	
	(b)		213.64	**3**	**M2** for 1.09 × 196 oe OR **M1** for 0.09 × 196 oe soi by 17.64	If non calculator method, it must be fully correct

Pearson Edexcel – Sample Papers - Paper 1 (Non-Calculator) Foundation Tier

23.

20		75	P1 A1	for start to process eg. linking 20% with 15 or 100 ÷ 5 (=20)

AQA Sample Paper 3– Morning (Calculator) Foundation Tier

24.

22	**Alternative method 1**		
	6.31 – 3.6(0) or 2.71	M1	
	their 2.71 ÷ 3.6(0) (× 100) or 0.752(7…) or 0.753	M1dep	
	75.2(7…) or 75.28 or 75.3	A1	Allow 75 with correct method seen
	Alternative method 2		
	6.31 ÷ 3.6(0) (× 100) or 1.752(7…) or 1.753 or 175.2(7…) or 175.3	M1	
	1.752(7…) – 1 or 1.753 – 1 or 175.2(7…) – 100 or 175.3 – 100	M1dep	
	75.2(7…) or 75.28 or 75.3	A1	Allow 75 with correct method seen