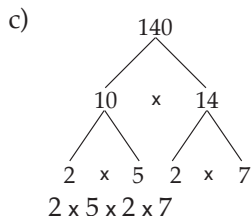
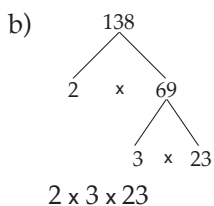


**Answers****Page 5**

1. a) 1, 2, 4, 7, 14, 28  
b) 1, 2, 3, 6, 7, 14, 21, 42  
c) 1, 19
2. a) 17, 34, 51, 68, ...  
b) 21, 42, 63, 84, ...  
c) 62, 124, 186, 248, ...
3. a) 1, 3, 7, 21  
and 1, 2, 4, 7, 8, 14, 28, 56  
HCF = 7  
b) 1, 3, 5, 9, 15, 45  
and 1, 3, 9, 13, 39, 117  
HCF = 9  
c) 1, 5, 19, 95  
and 1, 2, 3, 6, 19, 38, 57, 114  
HCF = 19
4. a) 12, 24, 36, 48, 60, 72, ...  
20, 40, 60, ...  
LCM = 60  
b) 6, 12, 18, 24, 30, 36, 42, 48,  
54, 60, 66, ...  
11, 22, 33, 44, 55, 66, ...  
LCM = 66  
c) 9, 18, 27, 36, 45, 54, ...  
15, 30, 45, ...  
LCM = 45

5. a) prime number

**Page 6**

6. 8, 16, 24, 32, 40, 48, 56, ...  
14, 28, 42, 56, ...  
56 seconds

**Page 6 cont...**

7.

47	29	101
113	59	5
17	89	71

8.  $4 = 2 + 2$ ,  $5 = 2 + 3$ ,  $6 = 3 + 3$ ,  
 $7 = 2 + 5$ ,  $8 = 5 + 3$ ,  
 $9 = 2 + 7$ ,  $10 = 5 + 5$ ,  
 $12 = 5 + 7$ ,  $13 = 11 + 2$ ,  
 $14 = 11 + 3$ ,  $15 = 2 + 13$   
 $16 = 13 + 3$ ,  $18 = 7 + 11$   
 $19 = 2 + 17$  all can.  
14 numbers less than 20.

9. HCF of 448 and 616 is  
56 so greatest possible length  
is 56 cm.

10. LCM of 28 and 24 which is  
168. So 168 seconds

11.  $48 = 2 \times 2 \times 2 \times 2 \times 3$   
 $108 = 2 \times 2 \times 3 \times 3 \times 3$   
HCF =  $2 \times 2 \times 3 = 12$

12. LCM of 40, 48 and 60 = 240,  
so 240 minutes (4 hours)

13. HCF of 96, 144 and 224,  
so 16 pieces of chicken.

**Page 8**

14. 789.88
15. 0.0024
16. 50.0
17. 67 500
18. 0.0098
19. 2000
20. 655.0
21. 0.0480
22. 27 000
23. 44
24. 0.9
25. 5.23
26. 480
27. 8.4
28. 60
29. 7220

**Page 9**

30. 6.0 (1 dp)
31. 9 (1 sf)
32. 3.22 (2 dp)
33. 39 (2 sf)
34. 2.62 (3 sf)
35. 12 (2 sf)
36. 110 (2 sf)
37. 0.13 (2 sf)
38. 22.8 m (1 dp)
39.  $47 \text{ cm}^3$  (2 sf)
40. 5.4 m (1 dp)
41. 5.6 L (2 sf)  
as only the 45 litres is  
measured (the 8 parts are  
counted).
42.  $43 \text{ cm}^2$  (2 sf)
43. \$353.50 (2 sf)
44. a)  $21 \text{ m}^2$   
b) 4  
c)  $55 \text{ cm}^3$  (2 sf)  
d) \$170.95  
e) \$3897  
f) No should be rounded to  
3 sf i.e  $52.8 \text{ m}^3$ .  
g) 18 hours.

**Page 10**

45. 120 (accept 102)
46. 70 (accept 77)
47. 500
48. 9
49. 200
50. 60
51. 100
52. 250
53. \$150
54. \$10 000
55. \$100
56. \$3
57. \$12 000
58.  $1500 \text{ cm}^3$
59. \$300
60. 1250 km

## Page 11

61. 8000 minutes  
 62. \$180  
 63. \$2400  
 64. Car \$20 000.  
 Deposit \$4000.  
 Balance \$16 000  
 + interest = \$18 000.  
 Cost per month = \$1000.  
 Other costs per month = \$50.  
 Fuel per month = \$160.  
 Services per month = \$40.  
 Total \$1250 per month.

## Page 12

65.  $4.15 \times 10^4$   
 66.  $5.91 \times 10^2$   
 67.  $1.275 \times 10^1$   
 68.  $4.5 \times 10^{-2}$   
 69.  $5.92 \times 10^{-1}$   
 70.  $7 \times 10^0$   
 71.  $1.27 \times 10^7$   
 72.  $9.56 \times 10^{-6}$

## Page 13

73.  $9.32 \times 10^3$   
 74.  $1.58 \times 10^3$   
 75.  $4.53 \times 10^{-5}$   
 76.  $1.2 \times 10^3$   
 77.  $4.44 \times 10^1$   
 78.  $7.13 \times 10^{-1}$   
 79.  $5.0 \times 10^2$   
 80.  $1.774 \times 10^0$   
 81.  $5.025 \times 10^6$   
 82.  $3.819 \times 10^7$   
 83.  $5.0 \times 10^{-3}$   
 84.  $3.65 \times 10^{-2}$   
 85. 0.000 485  
 86. 78 900 000  
 87. 0.325  
 88. 1.98  
 89. 987.6  
 90. 0.1423  
 91. 18.04  
 92. 0.0132  
 93. 499 seconds (3 sf)  
 94.  $3.1 \times 10^{10}$  years (2 sf)

## Page 13 cont...

95.  $9.47 \times 10^{12}$  km (3 sf)  
 96.  $14.0 \times 10^{20}$  kg (1 dp)  
 $= 1.40 \times 10^{21}$  kg (2 dp)  
 97.  $1.9 \times 10^{17}$  joules (2 sf)  
 98.  $5.3 \times 10^4$  years  
 $= 53\,000$  years

## Page 14

99. 12.096 mm  
 $= 12$  mm (2 sf)  
 100. \$5263.15  
 $\$5300$  per person (2 sf)  
 101. a) 73 800 000 000 000  
 b)  $7.38 \times 10^{13}$   
 c)  $4.54 \times 10^{23}$   
 d)  $8.88 \times 10^{-10}$   
 e)  $5.35 \times 10^{14}$   
 f)  $3.942 \times 10^7$   
 g)  $3.35 \times 10^9$   
 h)  $2.24 \times 10^8$

## Page 16

102. 25  
 103. 21  
 104. 4  
 105. 64  
 106. 17  
 107. 60  
 108. 168  
 109. 168  
 110. 98  
 111. 540  
 112. 288  
 113. 24  
 114. 35  
 115. 177  
 116.  $1\frac{1}{24}$   
 117.  $\frac{1}{2}$   
 118.  $\frac{17}{25}$   
 119.  $\frac{27}{70}$   
 120. 2  
 121.  $\frac{73}{120}$

## Page 16 cont...

122. 44  
 123. -27  
 124.  $\frac{2}{5}$  (0.4)  
 125.  $2\frac{5}{14}$  (2.357 (3 dp))  
 126.  $\frac{3}{20}$  (0.15)  
 127.  $\frac{7}{9}$  (0.778 (3 dp))  
 128.  $\frac{2}{3}$  (0.667 (3dp))  
 129.  $\frac{-1}{32}$  (-0.03125)  
 130.  $71 - 6 \times 8 + 7 \times (4 - 4) - 3$   
 $71 - 48 + 7 \times \textcircled{0} - 3$   
 $71 - 48 + 0 - 3$   
 $= 20$   
 131.  $9 + 3 - 16 + 5 \times 4 - 2$   
 $9 + 3 - 16 + 20 - \textcircled{2}$   
 $12 - 16 + 20 - 2$   
 $-4 + 20 - 2$   
 $16 - 2$   
 $= 14$

## Page 18

132. 29  
 133. -129  
 134. -65  
 135. 183  
 136. -156  
 137. 240  
 138. -16  
 139. 27  
 140. 10  
 141. 648  
 142. 8  
 143. 3  
 144. -64  
 145. -39  
 146. -31  
 147. -5  
 148. 9  
 149. -1  
 150. -54  
 151. 0  
 152. -27  
 153. -114  
 154. 34

## Page 18 cont...

155. -54  
 156. -34  
 157. 529  
 158. -89  
 159. 90  
 160. -14  
 161. 5074  
 162. -64  
 163. 167  
 164. -295  
 165. -1542

166. 60

167. -3

## Page 19

168. \$4750 Dr or -4750  
 169. \$323 108 Dr or -\$323 108  
 170. \$32.5 million  
 171. 1290 m  
 172. 35 m below sea level or -35 m  
 173. 81 years  
 174. 1950 metres  
 175. 42 °C  
 176. a) 2370 years  
       b) 1392 years  
       c) 5414 years

## Page 22

177.  $\frac{1}{9}$   
 178.  $1\frac{3}{56}$   
 179.  $\frac{5}{8}$   
 180.  $2\frac{6}{7}$   
 181.  $4\frac{1}{4}$   
 182.  $\frac{21}{40}$   
 183.  $3\frac{8}{9}$   
 184.  $3\frac{1}{15}$   
 185.  $1\frac{23}{70}$   
 186.  $\frac{1}{35}$   
 187.  $\frac{314}{855}$   
 188.  $3\frac{11}{15}$

## Page 22 cont...

189.  $\frac{13}{24}$   
 190.  $1\frac{5}{16}$   
 191.  $\frac{9}{16}$   
 192.  $1\frac{13}{15}$   
 193.  $\frac{2}{3}$   
 194.  $\frac{61}{90}$   
 195.  $46\frac{82}{125}$

196. 464

## Page 23

197.  $\frac{7}{16}$   
 198. 15 minutes  
 199.  $\frac{3}{20}$   
 200.  $\frac{7}{20}$   
 201.  $\frac{4}{15}$   
 202.  $\frac{11}{15}$   
 203.  $\frac{4}{15}$   
 204. 15 pieces  
 205. 1890 products  
 206.  $6\frac{2}{3}$   
 207.  $2\frac{29}{84}$   
 208. \$125  
 209. 104 km  
 210.  $2\frac{7}{90}$   
 211. a) 95 vehicles  
       b) 25 vehicles  
       c) 20 cars  
       d) \$900  
       e) 25 vehicles  
       f)  $\frac{19}{40} = 57$  vehicles

## Page 25

212.  $\frac{19}{50}$   
 213.  $1\frac{11}{20}$   
 214.  $\frac{7}{40}$   
 215.  $\frac{3}{4}$   
 216.  $\frac{3}{50}$   
 217.  $\frac{1}{200}$   
 218.  $\frac{17}{250}$   
 219.  $\frac{1}{8}$   
 220. 72%  
 221. 43.5%  
 222. 80%  
 223. 125%  
 224. 180%  
 225. 2.5%  
 226. 37.5%  
 227. 5%  
 228. \$18  
 229. 135 kg  
 230. \$323.75  
 231. 7.65 L  
 232. \$22.50

233. 55

234. 4.74

235. 276

## Page 26

236. \$26.40  
 237. 12.9 kg  
 238. 756 girls  
 239. \$105  
 240. 70.4% (1 dp)  
 241. 5%  
 242. \$37.50  
 243. \$17  
 244. 75.7% (1 dp)  
 245. 600 boys  
 246. a) \$914.16  
       b) \$68.56  
       c) \$86.85  
       d) \$83

**Page 28**

247. \$258.30  
 248. 126.1  
 249. \$41.56  
 250. \$47.25  
 251. \$110.98  
 252. \$3499.13  
 253. 506 pupils  
 254. \$649 900  
 255. 1544 or 1545  
 256. \$19 125

**Page 29**

257. 31.4 % (1 dp)  
 258. 23.1 % (1 dp)  
 259. 10.7% (1 dp)  
 260. 20.8% (1 dp)  
 261. 38.0 % (1 dp)  
 262. 46.6% (1 dp)  
 263. \$182.61  
 264. \$430.43  
 265. \$45  
 266. \$2086.96  
 267. \$168.18  
 268. \$133.90  
 269. \$476.86  
 270. 12.0% (1 dp)

**Page 30**

271. a) \$314.50  
 b) \$254.75  
 c) 11.3% (1 dp)  
 d) Receives \$266.00 now so better off by \$11.25  
 e) 77.6% (1 dp)  
 272. a)

Commission – Company A	\$210 000
Flat fee of \$400	\$400
4.5% of \$100 000	\$4500
2.5% of \$110 000	\$2750
Total (excluding GST)	\$7650
Total (including GST of 15%)	\$8797.50

**Page 30 Q272 cont...**

b)

Commission – Company B	\$210 000
Flat fee	\$250
4% of \$80 000	\$3200
3.5% of \$130 000	\$4550
Total (excluding GST)	\$8000
Total (including GST of 15%)	\$9200

- c) \$402.50  
 d) 4.4% (1 dp)

**Page 31**

273. \$7024.64  
 274. \$23 534.07  
 275. 14.4% more (1 dp)  
 276. a) \$30.52  
 b) \$15.52  
 c) 103.5%  
 277. a) Option 1 = \$7693.12  
 Option 2 = \$8525  
 Option 2 better by \$831.88  
 b) 10.8%  
 c) 11.3%

**Page 33**

278. 1 : 2  
 279. 1 : 16  
 280. 1 : 3  
 281. 2 : 3  
 282. 16 : 1  
 283. 2 : 5  
 284. 3 : 4 : 10  
 285. 4 : 9 : 3  
 286. 3 : 5  
 287. 1 : 50  
 288. 1 : 6  
 289. 2 : 3 : 5  
 290. 10 : 6 : 2 : 1  
 291. 1 : 30  
 292. 1 : 100 000  
 293. 3 : 10  
 294.  $w = 35$   
 295.  $x = 144$   
 296.  $y = 2.33$  (2 dp)  
 297.  $z = 12$

**Page 33 cont...**

298. \$12, \$20  
 299. 30 L, 10 L  
 300. \$49.78, \$78.22  
 301. 4.75 L, 0.25 L  
 302. 1.2 m, 2.4 m, 1.6 m  
 303. \$8.95, \$5.37, \$14.32, \$7.16  
 304. \$6.60, \$11.00  
 305. \$66, \$55, \$22  
 306. Alysia = \$144  
 Barbara = \$96  
 307. Clare = \$26.67  
 Dennis = \$20  
 Elliot = \$33.33  
 308. \$3400 and \$5100  
 309. \$480 and \$200

**Page 34**

310. \$15  
 311. 1.56 litres  
 312. 12 cows  
 313. 56 kg  
 314. a) 1333 g (1.333 kg)  
 b) 67 500 L  
 c) \$247.50  
 d) \$224.24  
 e) 162.5 ml  
 f) 7.5 km  
 g) 3 gold medals.

**Page 35**

315.  $24 + 48 + 60 = 132$   
 316. 10 men  
 317. 161.5 units of copper and 28.5 units of iron  
 318. 85 grams

**Page 36**

319. 30 scientific and 10 algebraic calculators.  
 320. 24 males  
 321. Construction cost = \$262 500  
 Total cost = \$375 000  
 322.  $x = 6$   
 323.  $x = 5$

**Page 36 cont...**

324. Printing = \$36 000  
 Paper = \$18 000  
 Covers = \$9000  
 Total cost = \$63 000

325.  $x = 20$

326. By 2400 books.

**Page 38**

327. 4.8 kg  
 328. 42 kg  
 329. 10 days  
 330. 20 days  
 331. 8 days  
 332. Uses an additional  
 300 L (1800 L in total).

**Page 39**

333. 4.2 ohms  
 334. 16 km/h  
 335. 22 500 baht  
 336. \$500  
 337. 104.2 cm (1 dp)  
 338. \$51.46  
 339. 2700 L  
 340. 1250  
 341. a) 33.3 g (1 dp)  
 b) 1 kg  
 c) 375 ml  
 d) 187.5 g

**Page 40**

342. 1.6 hours  
 343. An extra 12 tradesmen  
 (27 in total)  
 344. For 33 days (33.3)  
 345. 11.7 minutes  
 346. 33.75 m  
 347. 7.5 minutes  
 348. \$778 000 (3 sf)  
 349. 63 cm

**Page 42**

350. a) 7.5 seams/min.  
 b) 337 or 338 seams  
 (337.5)  
 c) 133.3 mins. (1 dp)  
 351. a) \$14.75 per hour  
 b) \$3156.50  
 c) 340 hours  
 352. a) 427.5 km  
 b) 26.39 m/s  
 c) 3.8 seconds (1 dp)  
 353. a) 18.7 mins.  
 b) 38.9 hours  
 c) 900 L/h  
 354. a) 25 kg/h  
 b) 23.3 kg/h  
 355. a) 0.354 cm/h  
 b) 23 days 13 hours  
 356. a) 12 days  
 b) 1.2 days  
 c)  $\frac{12}{x}$  days  
 357. a) 7.5 hours  
 b) 4 hours  
 c)  $\frac{60}{x}$  hours

**Page 43**

358. a) 12.5 days  
 b) 22.1 days  
 359. a) 2 days  
 b) 3.6 days  
 c) 15 people  
 360. a) 50 days  
 b) 65 days  
 c) 45 people  
 361. a) 0.75 m track/  
 worker/day  
 b) 26.7 days  
 c) 100 workers  
 362. a) 200 seconds  
 b) 54 km/h  
 c) 63 km/h  
 363. 4.8 hours  
 364. 4.5 hours

**Page 45**

365.  $\frac{1}{8}$   
 366.  $\frac{1}{25}$   
 367.  $\frac{4}{9}$   
 368.  $\frac{8}{125}$   
 369.  $\frac{64}{343}$   
 370. 625  
 371. 2187  
 372. 256  
 373. 1  
 374.  $\frac{1}{5}$   
 375.  $\frac{1}{16}$   
 375.  $\frac{1}{27}$   
 377.  $\frac{1}{6561}$   
 378. 4  
 379.  $\frac{3}{2}$   
 380.  $\frac{64}{27}$   
 381. 20  
 382. 28  
 383. 85  
 384. 96  
 385.  $\frac{1}{2}$   
 386.  $\frac{1}{4}$   
 387.  $\frac{2}{3}$   
 388.  $\frac{5}{7}$   
 389.  $\frac{7}{10}$   
 390.  $1\frac{1}{2}$   
 391.  $1\frac{2}{3}$   
 392.  $1\frac{3}{5}$

**Page 45 cont...**

393. Between 3 and 4  
 394. Between 5 and 6  
 395. Between 6 and 7  
 396. Between 10 and 11  
 397. Between 12 and 13  
 398. Between 17 and 18  
 399. Between 30 and 31  
 400. Between 31 and 32  
 401. 6.083 (4 sf)  
 402. 14.07 (4 sf)  
 403. 19.49 (4 sf)  
 404. 24.90 (4 sf)  
 405. 12.25 (4 sf)  
 406. 17.32 (4 sf)  
 407. 30.82 (4 sf)  
 408. 31.62 (4 sf)  
 409. 39.75 (4 sf)  
 410. 50.12 (4 sf)  
 411. 98.89 (4 sf)  
 412. 113.5 (4 sf)

**Page 47**

413.  $\frac{1}{64}$   
 414. 3  
 415.  $\frac{1}{100}$   
 416. 216  
 417.  $\frac{1}{125}$   
 418. 81  
 419.  $\frac{1}{4}$   
 420. 3  
 421. 4  
 422.  $\frac{4}{3}$   
 423.  $\frac{3}{2}$   
 424. 4  
 425. 2  
 426.  $\frac{1}{2}$   
 427. 2

## Page 48

428.  $\frac{1}{4}$   
 429. 64  
 430.  $\frac{1}{10}$   
 431. 8  
 432.  $\frac{1}{16}$   
 433.  $\frac{1}{25}$   
 434.  $\frac{1}{6}$   
 435. 64  
 436. 9  
 437.  $\frac{64}{27}$   
 438. 3  
 439. 16  
 440.  $\frac{27}{8}$   
 441.  $\frac{16}{9}$   
 442.  $\frac{8}{5}$   
 443. 15.625  
 444. 0.000 32  
 445. 10  
 446. 0.04  
 447. 16  
 448. 3.375  
 449. -5  
 450. 100  
 451. 0.16  
 452. -2  
 453. 0.027  
 454. 0.000 01  
 455.  $\sqrt[3]{x}$   
 456.  $\sqrt[3]{y^2}$   
 457.  $\sqrt[4]{z^3}$   
 458.  $\frac{1}{\sqrt{x}}$   
 459.  $\frac{1}{\sqrt{y^3}}$   
 460.  $\frac{1}{\sqrt[3]{z^2}}$   
 461.  $4\sqrt[3]{x}$   
 462.  $3\sqrt{y}$

## Page 48 cont...

463.  $5\sqrt[3]{z^4}$   
 464.  $\frac{2}{\sqrt{x}}$   
 465.  $\frac{8}{\sqrt[4]{y^3}}$   
 466.  $\frac{10}{\sqrt[3]{z^2}}$

## Page 51

467. \$33.75  
 468. \$3375  
 469. \$5940  
 470. \$14 875  
 471. 13.0%  
 472. \$297.40

## Page 52

473. \$2590.71  
 474. \$20 574.73  
 475. \$120 585.70  
 476. \$295 405.62  
 477. \$24 579.25  
 478. \$123 918.52  
 479. \$3022.31  
 480. \$484.63  
 481. \$12 420.83  
 482. \$5000 at 4.5% simple  
       = \$6125.  
       \$4000 at 9% compound  
       = \$6154.50.  
       So \$4000 at 9% compounded  
       by \$29.50.

## Page 54

483. \$22 280.08  
 484. 5.7% (1 dp)  
 485. 23.6% (1 dp)  
 486. \$64 947.32  
 487. 12.9% (1 dp)  
 488. 16.6 years (1 dp)  
 489. 20.0 years (1 dp)  
 490. 9.9 years (1 dp)

## Page 55

**Practice Assessment Task 1**  
**Numeric Reasoning**

**Option 1**

Invest for 5 months at 3.95% pa and then for 1 month at 3.75% pa.

$$50\,000 + 50\,000 \times 0.0395 \times \frac{5}{12}$$

$$= \$50\,822.92$$

$$50\,822.92 + 50\,822.92 \times 0.0375 \times \frac{1}{12}$$

**Option 2**

Invest monthly at 3.75% for six months.

$$50\,000 + 50\,000 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,156.25$$

$$50\,156.25 + 50\,156.25 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,312.99$$

$$50\,312.99 + 50\,312.99 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,470.22$$

$$50\,470.22 + 50\,470.22 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,627.94$$

$$50\,627.94 + 50\,627.94 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,786.15$$

$$50\,786.15 + 50\,786.15 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,944.86$$

**Option 3**

Invest for 3 months at 3.9% and then three single months at 3.75%.

$$50\,000 + 50\,000 \times 0.039 \times \frac{3}{12}$$

$$= \$50\,487.50$$

$$50\,487.50 + 50\,487.50 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,645.27$$

$$50\,645.27 + 50\,645.27 \times 0.0375 \times \frac{1}{12}$$

$$= \$50\,803.54$$

$$50\,803.54 + 50\,803.54 \times 0.0375 \times \frac{1}{12}$$

**Option 4**

Invest for three months at 3.9% and then three months at 3.9%.

$$50\,000 + 50\,000 \times 0.039 \times \frac{3}{12}$$

$$= \$50\,487.50$$

$$50\,487.50 + 50\,487.50 \times 0.039 \times \frac{3}{12}$$

$$= \$50\,979.75$$

Best option is 5 months at 3.95% pa and 1 month at 3.75% pa. Total value of investment after this time is \$50 981.74.



**Page 56****Practice Assessment Task 2****Numeric Reasoning****Option 1**

Cost after deposit of \$500 = \$357.98

End of month 1 =

$357.98 \times 1.025 - 100 = \$266.93$

End of month 2 =

$266.93 \times 1.025 - 100 = \$173.60$

End of month 3 =

$173.60 \times 1.025 - 100 = \$77.94$

End of month 4 =

$77.94 \times 1.025 - \$79.89 = 0$

Total paid \$500 + \$300 + 79.89

= \$879.89

**Option 2**

Cost after deposit of \$500 = \$368.98

3 payments (interest free) = \$300.00

End of month 4 =

$68.98 \times 1.02 - \$70.36 = 0$

Total paid \$500 + \$300 + 70.36

= \$870.36

**Option 3**

\$995 less GST = \$865.22

After deposit of \$500 = \$365.22

3 payments (interest free) = \$65.22

10.5% on outstanding balance =

$65.22 \times 1.105 - 72.07 = 0$

Total paid \$500 + \$300 + \$72.07 =

\$872.07

Best option is option is Option 2 for \$870.36.

**Page 57****Practice Assessment Task 3****Numeric Reasoning****Employee 1**

Salary =  $40 \times 14.75 \times 52 = \$30\,680$  pa

PAYE =  $0.125 \times 14\,000 = \$1750.00$

+  $0.21 \times 16\,680 = \$3502.80$

= \$5252.80

KiwiSaver  $30\,680 \times 0.02 = \$613.60$

Total tax + KiwiSaver pa = \$5866.40

**Employee 2**

Salary =  $45 \times 24.50 \times 52 = \$57\,330$

PAYE =  $0.125 \times 14\,000 = \$1750.00$

+  $0.21 \times 34\,000 = \$7140.00$

+  $0.33 \times 9\,330 = \$3078.90$

Loan =  $57\,330 \times 0.08 = \$4586.40$

KiwiSaver  $57\,330 \times 0.04 = \$2293.20$

Tax + KiwiSaver + loan = \$18 848.50

**Employee 1**

Take home pay per fortnight =

$(\$30\,680 - \$5866.40) \div 26 = \$954.37$

**Employee 2**

Take home pay per fortnight =

$(\$57\,330 - \$18\,848.50) \div 26 = \$1480.06$

% difference = 55.1% (1 dp)

**Assessment Clarifications:**

Source: <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/mathematics/clarifications/level-1/as91026/>

**Expected evidence for Achieved**

For the award of Achieved, the requirements include selecting and using a range of methods. The evidence for this aspect cannot come from a situation where students are told what method to use.

To be used as evidence, 'methods' must be relevant to the solution of the problem.

The 'methods' also need to be at the appropriate curriculum level for the standard, for example working with everyday fractions like one half, one quarter and one fifth is not at the appropriate curriculum level.

For rounding with decimal places and significant figures, it is likely that there will need to be a holistic judgement on the evidence based on an understanding of rounding across the entire task

**Extended abstract thinking**

For the award of Excellence, there needs to be evidence that students are thinking beyond the problem. This could involve considering other identified factors and the effect of them on the solution of the problem. Alternatively, students could consider a change in one of the aspects involved in the solution and explore the consequences of that change on their solution.

**Communicating solutions**

At all levels there is a requirement relating to the communication of the solutions.

At Achieved level, the result of a numerical calculation only is insufficient, working is expected and students need to indicate what the calculated answer represents.

At Merit level, students need to clearly indicate what they are calculating, and their solutions need to be linked to the context.

At Excellence level, the response needs to be clearly communicated with correct mathematical statements, and students need to explain any decisions they make in the solution of the problem.