Multiple-choice section

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Answer | B | B | B | D | C | D | B | C | B | A |

Question 1 [1.1]

B

13 × 2

= (10 + 3) × 2

= 10 × 2 + 3 × 2

Question 2 [1.2]

B

 = 3 × 3 × 3 × 3 × 3

Question 3 [1.2]

B

Four cubed is equal to

= 4 × 4 × 4

= 16 × 4

= 64

Question 4 [1.3]

D

1000 ÷ 20

= 1000 ÷ 10 ÷ 2

= 100 ÷ 2

= 50

They will need to wash 50 cars.

Question 5 [1.3]

C

40 × 50

= 4 × 10 × 5 × 10

= 4 × 5 × 10 × 10

= 2000

Question 6 [1.4]

D

Shirt $52; tie $21; trousers $68

Estimate = 50 + 20 + 70

= $140

Question 7 [1.4]

B

216 ÷ 9

≈ 200 ÷ 10

= 20

Question 8 [1.5]

C

9 + 5 – 6 ÷ 2

= 9 + 5 – 3

= 11

Question 9 [1.5]

B

10 + 42 ÷ (2 + 6)

= 10 + 16 ÷ 8

= 10 + 2

= 12

Question 10 [1.6]

A

Tiffany: $20

Older brother: Double the amount $20 × 2 = $40

Younger brother: Half the amount $20 × 0.5 = $10

Difference = 40 – 10 = $30

Multiple-choice total marks: 10

Short answer section

Question 11 4 marks [1.1, 1.2]

(a) The *product* is the result of a multiplication calculation.

(b) 25 is a perfect *square*.

(c) 4 × 4 × 4 can be written in *index* form as 43 and 4 is called the *base*.

Question 12 4 marks [1.1, 1.2]

73

= 7 × 7 × 7

= 49 × 7

= 7 × (40 + 9)

= 280 + 63

= 343

Question 13 2 marks [1.1]

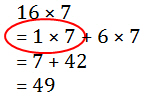
2 × 17 × 5

= 2 × 5 × 17

= 10 × 17

= 170

Question 14 3 marks [1.1]

(a) Jonathon’s working  


(b) Correct working  
16 × 7  
= 10 × 7 + 6 × 7  
= 70 + 42  
= 132

(c) Jonathon split up the ‘ones’ place value correctly but has forgotten that the first digit in the number he is splitting is in the ‘tens’ place-value column.

Question 15 3 marks [1.1]

36 + 23 + 44

= 36 + 44 + 23

= 80 + 23

= 103

Question 16 2 marks [1.1]

32 × 4

= (30 + 2) × 4

= 30 × 4 + 2 × 4

= 120 + 8

= 128

Question 17 3 marks [1.2, 1.3]

3004

= 300 × 300 × 300 × 300

= 3 × 3 × 3 × 3 × 100 × 100 × 100 × 100

= 9 × 9 × 100 × 100 × 100 × 100

= 81× 100 000 000

= 8 100 000 000

Question 18 1 mark [1.2]

4 × 4 × 4 × 4 × 4 = 45

Question 19 1 mark [1.2]

 = 5

Question 20 3 marks [1.1, 1.3]

51 × 14

= 51 × 2 × 7

= 102 × 7

= 7 × (100 + 2)

= 7 × 100 + 7 × 2

= 714

Question 21 1 mark [1.4]

9000

Question 22 2 marks [1.4]

62 × 31

≈ 60 × 30

= 1800

Question 23 2 marks [1.5]

15 + 40 ÷ 5

= 15 + 8

= 23

Question 24 2 marks [1.5]

8 ÷ (4 + 4) × 3 = 3

Short answer total: 33

Extended answer section

Question 25 6 marks [1.1, 1.3, 1.6]

Shorts:

3 × $47

= 3 × 40 + 3 × 7

= $141

Ties:

13 × $13

|  |  |  |
| --- | --- | --- |
|  | 10 | 3 |
| 10 | 10 × 10 = 100 | 10 × 3 = 30 |
| 3 | 3 × 10 = 30 | 3 × 3 = 9 |

= 100 + 30 + 30 + 9  
= $169

Shirts:

31 × 8

= 31 × 2 × 2 × 2

= 124 × 2

= $248

Total:

141 + 169 + 248

= 140 + 1 + 169 +248

= 140 + 270 + 248

= 410 + 248

= 658

Steven spends $658 in total.

Question 26 4 marks [1.2, 1.3, 1.4]

(a) 26 ≈ 30  
262 × 104  
≈ 302 × 104  
= 30 × 30 × 10 × 10 × 10 × 10  
3 × 10 × 3 × 10 × 10 000  
= 9 000 000

(b) 26 ≈ 30  
30 is more than 26 and so since our calculation only involves multiplications our estimate will be an overestimate

(c) 262 × 104  
To calculate 262  
= 26 × 26

|  |  |  |
| --- | --- | --- |
|  | 20 | 6 |
| 20 | 20 × 20 = 400 | 20 × 6 = 120 |
| 6 | 6 × 20 = 120 | 6 × 6 = 36 |

26 × 26 = 400 + 120 + 120 +36 = 676

262 × 104

= 26 × 26 × 10 × 10 × 10 × 10

= 676 × 10 000

= 6 760 000

Extended answer total: 11

TOTAL test marks: 54