Multiple-choice section

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

Question 1 [5.1]

B

Perimeter of the square = 4 × edge length

= 4 ×  = 27 cm

Question 2 [5.3]

D

*C* = 2π*r*

= 2 × π ×  = 126.45 cm

Question 3 [5.3]

A

Curved side = π*r*

= π ×= 32.99 cm

Straight length = 2 × = 21 cm

Total perimeter = 32.99 + 21

= 53.99 cm

Question 4 [5.4]

B

Area = base × height, 42 = base × 8,   
base length = 42 ÷ 8 = 5.25 cm

Question 5 [5.4]

C

*A* = (*a* + *b*)*h*

518 = (17 + 20) × *h*

518 =*h*   
*h* = 518 ÷ 37 × 2 = 28 cm

Question 6 [5.5]

C

*A* = π*r*2 =

*r* =  = 3.68 cm

Question 7 [5.6]

A

Combined area = area of circle + area of rectangle

Total area = π× 102 + 7 × 11 = 391.2 cm2

Question 8 [5.3]

B

Area= base × height   
 = × 10.8 × 35 = 189 cm2

Question 9 [5.7]

C

Volume= 0.6 × 0.5 × 0.8

= 0.24 m3

Question 10 [5.8]

B

2:30 pm – 10:42 am = 3 hours 48 minutes

Multiple-choice total marks: 10

Short answer section

Question 11 2 marks [5.1]

2 × 24 mm + 2 × 18 mm = 84 mm

Question 12 2 marks [5.1]

38 mm × 2 + 42 mm × 2 + 58 mm = 218 mm

Question 13 2 marks [5.1]

The side lengths of a regular hexagon are equal.

Perimeter = 6 ×   
= 28.5 cm

Question 14 5 marks [5.1]

(a) 3 ×  =  cm

(b) 70 cm + 0.52 m + 320 mm + 480 mm   
= 70 cm + 52 cm + 32 cm + 48 cm   
= 202 cm

(c) 1180 cm + 10.4 m + 6.6 m + 980 cm + 0.019 km + 0.0075 km + 8.4 m  
= 1180 cm + 1040 cm + 660 cm + 980 cm + 1900 cm + 750 cm + 840 cm   
= 7350 cm

Question 15 3 marks [5.2]

Diameter of circle = 2 × 15 = 30 cm



The symbol used for the ratio is π.

Question 16 4 marks [5.3]

(a) Circumference of circle  


(b) Area enclosed by track  


Question 17 2 marks [5.4]

Area of parallelogram = base length × height = × =  cm2

Question 18 2 marks [5.4]

*A* = (*a* + *b*)*h*



 cm2

Question 19 5 marks [5.4]

(a) Area = *bh*

=  × 60 × 38

= 1155 cm2

(b) Area = *bh*

= 4200 cm × 0.024 km

= 42 m × 24 m

= 1008 m2

Question 20 2 marks [5.5]

*A* = π*r*2

= π × 5

= 98.52 cm2

Question 21 3 marks [5.5]

Area =× π*r*2

= × π × 

= 117.86 cm2

Question 22 4 marks [5.4, 5.5]

Diameter of suggested cake tin is 30 cm. Radius is 15 cm. Area of cake tin is π × 152 = 706.9 cm2.

The rectangular tins have base areas of 750 cm2 and 729 cm2. The smaller tin (the square tin) would do.

Question 23 3 marks [5.6]

*A* = (*a* + *b*)*h* + *bh*

= (12 + 16) × 12 + × 16 × 20

= 168 + 160

= 328 cm2

Question 24 6 marks [5.6]

(a) *A* = × π × (8.2)2 − × π × (4.1)2

= 79.2 m2

(b) The shape is composed of two circles, one of radius 1240 cm = 12.4 m and the other of radius 620 cm = 6.2 m.   
*A* = π × (6.2)2 + π × (12.4)2    
 = 603.81 m2

Question 25 3 marks [5.8]

(a) 6:21 am – 6 hours 24 minutes = 11:57 pm the day before

(b) 10:01 pm – 6 hours 24 minutes = 3:37 pm

(c) 3:13 pm – 6 hours 24 minutes = 8:49 am

Short answer total marks: 48

Extended answer section

Question 26 5 marks [5.6]

(a) Area = 2 × 17 × 24 + 2 × 18 × 12 + 2 × 48 × 10  
 = 2208 cm2

(b) Area = 2 × (22 – 10) × 48  
 = 1152 cm2

Question 27 6 marks [5.7]

The volume of the bag is to be contained in the tube.

(a) Volume of sleeping bag = 60 × 120 × 5 = 36 000 cm3

(b) Volume of the tube = π × 142 × 55   
= 33 866.37 cm3

(c) Although the tube is smaller than the bag volume, it is likely that it can be squashed into the tube.

(d) As the volume of the tube is 33 866 cm3 , its capacity is 33 866 mL.

Question 28 5 marks [5.8]

(a) 7:22 am – 32 minutes means that she left home at 6:50 am.

(b) 7:22 am + 31 minutes + 141 minutes = 10:14 am

(c) 10:14 am + 24 minutes + 2 × 48 minutes = 12:14 pm

Question 29 7 marks [5.7]

(a) Volume of semicircular region  


Volume of trapezium



Total volume = 1142.41 + 4928.4 = 6070.81 m3

(b) Volume of three quarters of swimming pool  


Extended answer total marks: 23

TOTAL test marks: 81