

Final Exam Option 2 Answers

Multiple Choice and Numerical Response Answers

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|--------------------------|----------|
| 1. A | 31. D |
| 2. D | 32. B |
| 3. D | 33. C |
| 4. D | 34. A |
| 5. 12.5 m | 35. 132 |
| 6. 12 m | 36. B |
| 7. D | 37. B |
| 8. 2, 3, 1 | 38. D |
| 9. A | 39. 27% |
| 10. B | 40. A |
| 11. C | 41. 0.3 |
| 12. A | 42. A |
| 13. A | 43. C |
| 14. B | 44. A |
| 15. A | 45. B |
| 16. C | 46. C |
| 17. C | 47. D |
| 18. C | 48. B |
| 19. B | 49. B |
| 20. B | 50. 6300 |
| 21. B | 51. D |
| 22. 1200 dm ³ | 52. C |
| 23. A | 53. B |
| 24. B | 54. 144 |
| 25. C | 55. D |
| 26. C | 56. B |
| 27. B | 57. C |
| 28. B | 58. A |
| 29. 5.8 m ³ | 59. 59°F |
| 30. C | 60. C |

Written Response Answers

1. a) 75

b) 25 out of 100 as a fraction is $\frac{25}{100}$ or $\frac{1}{4}$
as a decimal is 0.25
as a percent is 25%

c) $\frac{130}{842} \approx 0.1544$

$$0.1544 \times 100 = 15.44\%$$

Samples with bacteria present are 15.44%.

15.44% is greater than 15%, so the water is not safe to use.

d) Examples:

- I recommend that people do not use the water because 15.44% is greater than 15%.
- I recommend that people take precautions, like boiling their water before drinking it, because 15.44% is just greater than 15%.

2. a) height to width = 8:1
but height = 16 m
so, 16:width = 8:1
The width would be 2 m.

b) Surface area of curved face of a cylinder = $l \times w$
 $= C \times h$
 $= \pi dh$
 $\approx 3.14 \times 2 \times 16$
 ≈ 100.48

The surface area of curved face is 100.5 m^2 .

c) Volume of the block
 $=$ Volume of rectangular prism - Volume of triangular prism
 $= (l \times w \times h) - (\text{Area of base} \times h \text{ of prism})$
 $= (20 \times 8 \times 4) - (\frac{1}{2} \times b \times h \times 4)$
 $= 640 - (\frac{1}{2} \times 12 \times (8 - 2) \times 4)$
 $= 640 - 144$
 $= 496$

The volume of the block is 496 m^3 .

3. a) Let the distance in thousands of kilometres between the satellite and the farm be c .

$$c^2 = a^2 + b^2$$

$$c^2 = 3^2 + 20^2$$

$$c^2 = 9 + 400$$

$$c^2 = 409$$

$$c = \sqrt{409}$$

$$c \approx 20.2$$

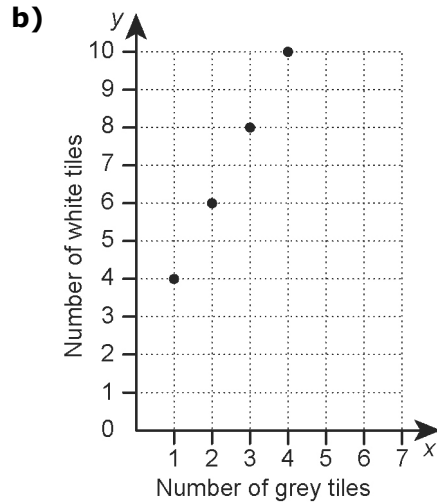
The distance between the satellite and the farm is 20.2 thousand kilometres.

b) Example: A bar graph would also be easy to read. An advantage is you could read the exact number of calls if a detailed scale is used and not have to count like with the pictograph. A disadvantage is that the bar graph is less visual without the images of the phones that relate directly to the topic like on the pictograph.

c) $3000 + \frac{2}{3}(480) + \frac{1}{5}(620) + \frac{1}{4} \times \frac{1}{2}(1200)$
 $= 3000 + 320 + 124 + 150$
 $= 3594$

Yes, the sprayer's tank will hold 6 L more than the mixture.

4. a) 4, 6, 8, 10



c) No, there are only whole numbers of tiles.

d) Examples:

- The first grey tile has four white tiles. For each grey tile added, two more white tiles are added.
- There are two more white tiles than twice the number of grey tiles.

e) $w = 2g + 2$

f) 10 grey tiles, Examples:

- I extended the table from part a) and when I got to 10 grey tiles, there were 22 white.
- I used the equation I found in part e)

$$w = 2g + 2$$

$$22 = 2g + 2$$

$$22 - 2 = 2g$$

$$20 = 2g$$

$$10 = g$$