Name: _____ Date: _____

Final Exam Answers

Multiple Choice and Numerical Response

1. D
2. B
3. 4
4. B
5. C
6. D
7. A
8. 264
9. D
10. 8000
11. 56
12. B
13. C
14. 4
15. 18
16. B
17. 5
18. 35
19. B
20. A
21. D
22. D
23. C
24. B
25. 150
26. C
27. B
28. A
29. C
30. D
31. B
32. 2431
33. B
34. B
35. C
36. D
37. C
38. A
39. A
40. C
41. A
42. D
43. C
44. B
45. C
46. A
47. 17.2
48. 7
49. D
50. D

Written Response

1. **a)** $l = 2x$; $w = 2x$; $h = 8$

$V = (2x)(2x)(8)$

$V = 32x^2$

b) $288 = 32x^2$

$\frac{288}{32} = \frac{32x^2}{32}$

$9 = x^2$

$\sqrt{9} = \sqrt{x}$

$3 = x$

The dimensions of the right prism are 8 cm by 6 cm by 6 cm.

c) Since $2x$ represents the diameter, and $x = 3$, then

diameter $= 2(3)$

$= 6$ cm

$r = \frac{d}{2}$

$= \frac{6}{2}$

$= 3$

$SA = 2\pi r^2 + 2\pi rh$

$= 2(3.14)(3)^2 + 2(3.14)(3)(8)$

$= 207.2 \text{ cm}^2$

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2. a) NO. Jeanine must interpolate to find the time it would take to run 5 km.

b) approximately 25 min.

c)

Time (t)	Distance (d)
0	0
10	2
20	4
30	6

d) $d = \frac{1}{5}t$ or $d = \frac{t}{5}$

e)
$$d = \frac{1}{5}t$$
$$10 = \frac{1}{5}t$$
$$5 \times 10 = 5 \times \frac{1}{5}t$$
$$50 = t$$

f) NO. At Jeanine's rate, she will complete the run in exactly 50 min. Students may present arguments such as:
- She is unlikely to maintain the same pace without slowing down. So, she will not run 10 km in 50 min.
- She may run at a slightly faster pace to achieve her goal, since she is so close to reaching it.

3. a)
$$-\frac{5}{6} + \left(-\frac{2}{3}\right) \div \frac{2}{5}$$
$$= -\frac{5}{6} + \left(-\frac{2}{3}\right) \times \frac{5}{2}$$
$$= -\frac{5}{6} + \left(-\frac{10}{6}\right)$$
$$= -\frac{15}{6}$$

b)
$$-2n + 3 \leq 5$$
$$-2n + 3 - 3 \leq 5 - 3$$
$$-2n \leq 2$$
$$\frac{-2n}{-2} \geq \frac{2}{-2}$$
$$n \geq -1$$

c)
$$\frac{(y + 1)}{3} = \frac{2}{5}$$
$$3\left(\frac{(y + 1)}{3}\right) = \frac{2}{5} \times 3$$
$$y + 1 = \frac{6}{5}$$
$$y + 1 - 1 = \frac{6}{5} - 1$$
$$y = \frac{1}{5}$$

d)
$$\frac{3^5}{3^2} - (-3)^2$$
$$= 3^3 - 9$$
$$= 27 - 9$$
$$18$$

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