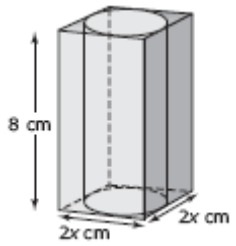
Name: _____ Date: _____

# *MathLinks 9 Adapted*
# Final Exam Written Response

*Write your response in the space provided. Present your response in a well-organized way, using complete sentences and correct units.*

*Use this information to answer #1.*

The volume of the rectangular glass prism is 288 $cm^3$.




**1. a)** Write an expression for the volume of the rectangular box in terms of $x$. Show your thinking. **Hint:** $V = lwh$.

Simplify your expression.

**b)** Using $V = 288\ cm^3$, find the value of $x$. Then, find the dimensions of the rectangular right prism.

Use your answer from part a).

Find $x$:

Dimensions of prism:

Height = _____

Side of square base = $2x$

= 2 × _____

= _____

Sentence: _____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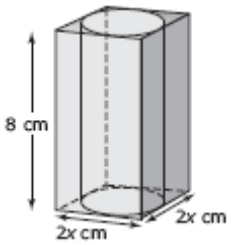
**c)** Calculate the surface area of the right cylinder.
Round your answer to the nearest tenth of a centimetre.




*Formula* → $SA = 2\pi r^2 + 2\pi rh$

Use your answer from part b) to find $r$.

*Substitute* →

*Solve* →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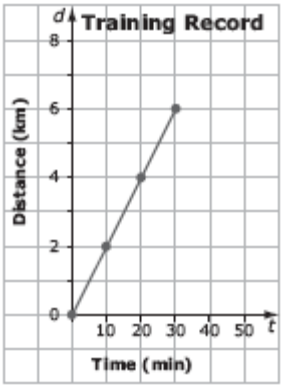
*Use this information to answer #2.*

Jeanine is training for a 10-km run.
The graph shows her times after 2 weeks of training.




**2. a)** Jeanine tells Max that she can extrapolate to find the time it would take to run 5 km. Is she correct? Circle YES or NO.
Give 1 reason for your answer.

_____

_____

_____

**b)** How long would it take for Jeanine to run 5 km? _____

**c)** Complete the table using the values from the graph.

| Time (*t*) | Distance (*d*) |
|---|---|
| 0 | 0 |
| | |
| | |
| | |

**d)** Write an equation to represent her distance (*d*) at any time, *t*.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**e)** Use your equation to calculate how far Jeanine could run in 50 minutes.

**f)** Jeanine's goal is to complete the 10-km run in less than 50 min. At her current pace, will she achieve her goal? Circle YES or NO. Give 1 reason for your answer.

_____

_____

_____


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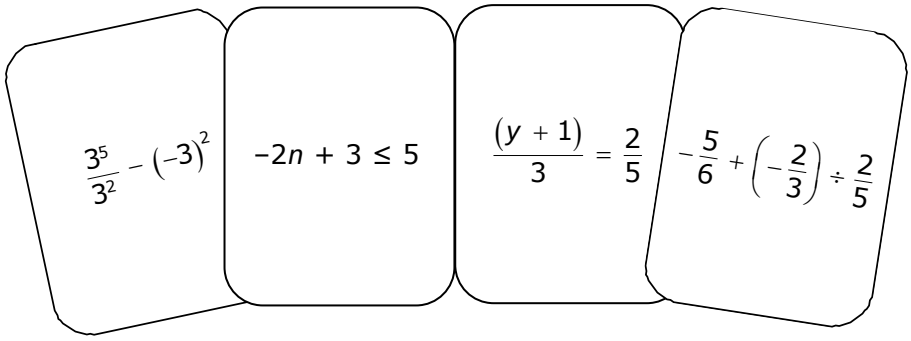
*Use this information to answer #3.*

A card game that you are playing with a partner involves drawing cards from a deck of cards. Each card has a mathematical expression or an equation on it. The object of the game is to solve the expressions or equations on your cards before your partner does. You draw the cards shown.




**3. a)** Find the answer for $-\frac{5}{6} + \left(-\frac{2}{3}\right) \div \frac{2}{5}$. Show your work.

**b)** Solve $-2n + 3 \leq 5$. Then, graph the solution.

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**c)** Solve $\frac{(y+1)}{3} = \frac{2}{5}$.

**d)** Simplify and evaluate $\frac{3^5}{3^2} - (-3)^2$.


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