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A farmer has two water tanks that drain at a rate of 2.5 gallons per minute. He is considering replacing the existing tanks with new ones, either Model S or Model T. Information about the new tanks is shown below. Each tank holds 100 gallons of water and drains at a constant rate.

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Which statement below is true about the drainage rates of the new tanks?

- **A** Both Model S and Model T drain faster than the existing tanks.
- **B** Both Model S and Model T drain slower than the existing tanks.
- **C** Model S drains faster and Model T drains slower than the existing tanks.
- **D** Model S drains slower and Model T drains faster than the existing tanks.









4

Pam and Kate will walk along the same path from the same starting point, and in the same direction.

- By the time Pam starts walking, Kate is 60 feet ahead of her.
- Pam walks at a constant rate of 25 feet every 7 seconds.
- Kate walks $\frac{1}{2}$ as fast as Pam.

How many seconds does it take for Pam to catch up to Kate?

- **A** 35.3
- **B** 33.6
- **C** 22.4
- **D** 16.8







6

A student is comparing three cylinders. The dimensions of the three cylinders are listed below.

- First cylinder has a height of 9 inches and a diameter of 4 inches.
- Second cylinder has a height of 3 inches and a diameter of 4 inches.
- Third cylinder has a height of 9 inches and its volume is $\frac{1}{4}$ the volume of the first cylinder.
 - **Part A** How does the volume of the second cylinder compare to the volume of the first cylinder? Explain your answer using the formula for the volume of a cylinder.

Part B How does the diameter of the third cylinder compare to the diameter of the first cylinder? Explain your answer.









Question Number	Кеу	DOK*	KCAS Primary Standard**
1	А	2	8.F.2
2	D	2	8.G.1.b
3	A	2	8.SP.2
4	В	3	8.EE.8.b
5	D	1	8.F.3
6	NA	2	8.G.9
7	NA	3	8.EE.6
8	NA	2	8.EE.8.b

Item Information

*DOK is the abbreviation for Depth of Knowledge. Please note that DOK is associated to the complexity level of an assessment item and is not aligned to the standard. Further information regarding DOK can be accessed on the Kentucky Department of Education Web site: <u>http://education.ky.gov/curriculum/docs/Pages/Content-Specific-Core-</u> <u>Content-for-Assessment-DOK-Support-Materials.aspx</u>

**Further information regarding Common Core Standards can be accessed on the Common Core Web site: <u>http://www.corestandards.org</u>