

7. Which of the following is not a polynomial?

A.  $-x^2 - 3x - 5$

B.  $21 + x + 2x^2 + 11x^3$

C.  $\frac{2}{3}x^7 + \frac{5}{7}x^2$

D.  $-2x^{\frac{1}{2}} + 12x + 5$

8. Which represents the fully simplified form of the following radical expression?

$$\sqrt{200}$$

A.  $2\sqrt{10}$

B.  $10\sqrt{2}$

C.  $5\sqrt{8}$

D.  $2\sqrt{50}$

9. The formula for the surface area of a cylinder is  $SA = 2\pi r^2 + 2\pi rh$ , where  $r$  is the radius of the base and  $h$  is the height. If you rewrite the formula as  $SA = 2\pi r(r + h)$ , what new entity does the product  $2\pi r$  in the first term represent?

- A. the circumference of the base of the cylinder
- B. the area of the base of the cylinder
- C. the area of the body of the cylinder
- D. the diameter of the base of the cylinder

10. Marco is trying to decide whether the product of two irrational numbers is rational or irrational.

Which of the following correctly describes such a product and gives the appropriate supporting examples?

- A. The product is always rational. Example factors:  $\sqrt{3} \cdot \sqrt{3}$ ,  $\sqrt{4} \cdot \sqrt{1}$
- B. The product is always irrational. Example factors:  $\sqrt{5} \cdot \sqrt{2}$ ,  $\sqrt{8} \cdot \sqrt{2}$
- C. The product may be either rational or irrational. Example factors:  $\sqrt{12} \cdot \sqrt{3}$ ,  $\sqrt{2} \cdot \sqrt{3}$
- D. The product will be neither rational nor irrational. Example factors:  $\sqrt{9} \cdot \sqrt{9}$ ,  $\sqrt{1} \cdot \sqrt{0}$ .