7.4 Trigonometry short version

Name___________________________________

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

The graph of a polar equation is given. Select the polar equation for the graph.

1) ______

A) \( r = 4 \cos \theta \)  B) \( r = 2 \)  C) \( r \sin \theta = 2 \)  D) \( r = 4 \sin \theta \)

2) ______

A) \( r = 4 \cos \theta \)  B) \( r = 2 \)  C) \( r = 4 \sin \theta \)  D) \( r \sin \theta = 2 \)

3) ______

A) \( r \sin \theta = -2 \)  B) \( r = -2 \)  C) \( r = -4 \cos \theta \)  D) \( r = -4 \sin \theta \)
4) _____

A) \( r = 4 + \cos \theta \)  
B) \( r = 8 \sin \theta \)  
C) \( r = 8 \cos \theta \)  
D) \( r = 4 + \sin \theta \)

5) _____

A) \( r = 4 \sin \theta \)  
B) \( r = 2 + \cos \theta \)  
C) \( r = 4 \cos \theta \)  
D) \( r = 2 + \sin \theta \)

6) _____

A) \( r = 2 + \cos(2\theta) \)  
B) \( r = 2 \)  
C) \( r = 2 \sin(2\theta) \)  
D) \( r = 2 \cos(2\theta) \)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Test the equation for symmetry with respect to the given axis, line, or pole.

7) \( r = -2 \cos \theta \); the polar axis  

7) ____________
8) \( r = 2 \cos \theta \); the line \( \theta = \frac{\pi}{2} \)

9) \( r = 2 \sin \theta \); the pole

10) \( r = 2 + 2 \cos \theta \); polar axis

11) \( r = 2 - 2 \cos \theta \); the line \( \theta = \frac{\pi}{2} \)

12) \( r = 6 + 2 \sin \theta \); the line \( \theta = \frac{\pi}{2} \)

13) \( r = 6 + 2 \cos \theta \); the pole

14) \( r = 2 - 4 \sin \theta \); the polar axis

15) \( r^2 = \sin 2\theta \); the pole

16) \( r = 3 \sin 3\theta \); the line \( \theta = \frac{\pi}{2} \)

17) \( r \cos \theta = 4 \); the polar axis

Graph the polar equation.

18) \( r = 4 \sin \theta \)
19) $r = 4 \cos \theta$

20) $r = 2 + \sin \theta$

21) $r = 2 + 2 \cos \theta$
22) \( r = 4 - \cos \theta \)

23) \( r = 3 \sin 2\theta \)

Use a graphing utility to graph the polar equation.

24) \( r = \frac{4}{\theta} \)
Graph the polar equation.

25) \( r = 5 - 6 \sin \theta \)
Answer Key
Testname: TRIGONOMETRY 7.4 SHORT VERSION

1) B
2) C
3) C
4) D
5) B
6) D
7) has symmetry with respect to polar axis
8) may or may not have symmetry with respect to the line \( \theta = \frac{\pi}{2} \)
9) may or may not have symmetry about the pole
10) has symmetry with respect to the polar axis
11) may or may not have symmetry with respect to the line \( \theta = \frac{\pi}{2} \)
12) has symmetry with respect to the line \( \theta = \frac{\pi}{2} \)
13) may or may not have symmetry about the pole
14) may or may not have symmetry with respect to the polar axis
15) has symmetry with respect to the pole
16) has symmetry with respect to the line \( \theta = \frac{\pi}{2} \)
17) has symmetry with respect to polar axis
18) 

![Diagram](image1)

19) 

![Diagram](image2)
23)

24)

25)