Graphs of trigonometric functions in radians (including sec, csc and cot) worksheet – Grade 12

Grade 12 · Mixed level · 20 questions · **Version X1268**

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1. Find the equation of the axis of $y = 5\sin(8x) + 6$. (Type the number after y =.)

   Answer: _____

2. Find the period of $y = -3\sin(3x) - 3$.

   A. 3π **B.** 6π **C.** $\frac{2\pi}{3}$ **D.** $\frac{\pi}{3}$

3. What is the equation of the axis of $y = 6\sin(8x) - 5$? (Type the number after y =.)

   Answer: _____

4. What is the amplitude of $y = -5\sin(4x) + 6$?

   Answer: _____

5. Find the amplitude of $y = -5\cos(2x)$.

   Answer: _____

6. Work out the amplitude of $y = 4\sin(7x) + 5$.

   Answer: _____

7. Work out the period of $y = -2\cos(5x) + 1$.

   A. $\frac{\pi}{5}$ **B.** 10π **C.** 5π **D.** $\frac{2\pi}{5}$

8. Describe the phase shift of $y = -3\cos(8(x - \frac{\pi}{2})) + 4$.

   A. 4π to the right **B.** π/16 to the right **C.** π/2 to the left **D.** π/2 to the right

9. What is the minimum value of $y = 5\sin(5(x - \frac{\pi}{4})) + 5$?

   Answer: _____

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10. Find the minimum value of $y = 2\cos(6(x - \frac{\pi}{3})) + 2$.

    Answer: _____

11. Work out the minimum value of $y = -4\sin(8(x - \frac{11\pi}{12})) + 6$.

    Answer: _____

12. Find the maximum value of $y = -3\sin(8(x - \frac{\pi}{4})) + 3$.

    Answer: _____

13. What is the maximum value of $y = -2\sin(5(x - \frac{\pi}{6})) + 6$?

    Answer: _____

14. Work out the maximum value of $y = -2\sin(8(x - \frac{\pi}{2})) - 6$.

    Answer: _____

15. What is the range of $y = 2\csc x - 4$?

    A. y ≤ −2 or y ≥ 2 **B.** −6 ≤ y ≤ −2 **C.** y ≤ −6 or y ≥ −2 **D.** all real numbers

16. Find the first vertical asymptote of $y = \csc(3x)$ for x > 0.

    A. $x = \frac{\pi}{12}$ **B.** $x = \frac{2\pi}{3}$ **C.** $x = \frac{\pi}{3}$ **D.** $x = \frac{\pi}{6}$

17. Work out the range of $y = -4\csc x$.

    A. y ≤ −4 or y ≥ 4 **B.** all real numbers **C.** −4 ≤ y ≤ 4

18. What is the first vertical asymptote of $y = \csc(7x)$ for x > 0?

    A. $x = \frac{\pi}{7}$ **B.** $x = \frac{\pi}{14}$ **C.** $x = \frac{2\pi}{7}$ **D.** $x = \frac{\pi}{28}$

19. Find the range of $y = -4\sec x - 2$.

    A. all real numbers **B.** y ≤ −4 or y ≥ 4 **C.** −6 ≤ y ≤ 2 **D.** y ≤ −6 or y ≥ 2

20. Work out the first vertical asymptote of $y = \tan(x)$ for x > 0.

    A. $x = 2\pi$ **B.** $x = \frac{\pi}{4}$ **C.** $x = \pi$ **D.** $x = \frac{\pi}{2}$

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Answer key · Version X1268

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1. **6**
2. **C (**$\frac{2\pi}{3}$**)**
3. **-5**
4. **5**
5. **5**
6. **4**
7. **D (**$\frac{2\pi}{5}$**)**
8. **D (π/2 to the right)**
9. **0**
10. **0**
11. **2**
12. **6**
13. **8**
14. **-4**
15. **C (y ≤ −6 or y ≥ −2)**
16. **C (**$x = \frac{\pi}{3}$**)**
17. **A (y ≤ −4 or y ≥ 4)**
18. **A (**$x = \frac{\pi}{7}$**)**
19. **D (y ≤ −6 or y ≥ 2)**
20. **D (**$x = \frac{\pi}{2}$**)**

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