

Spring Break Review

Multiple Choice: Find a coterminal angle between 0° and 360° .

1) 595°

A) 235°

B) 215°

C) 355°

D) 325°

2) 1030°

A) 310°

B) 130°

C) 320°

D) 40°

State if the given angles are coterminal.

3) $\frac{53\pi}{36}, -\frac{19\pi}{36}$

4) $\frac{31\pi}{18}, \frac{67\pi}{18}$

Find the reference angle.

5) -135°

6) -160°

7) $-\frac{13\pi}{9}$

8) $-\frac{7\pi}{6}$

Convert each degree measure into radians and each radian measure into degrees.

9) 420°

10) $-\frac{31\pi}{18}$

11) 240°

12) 330°

Solve each equation. Remember to check for extraneous solutions.

13) $\log_2 5 - \log_2 (x-3) = \log_2 5$

14) $\log 6 - \log 5x = \log 30$

15) $\log (x-4) - \log x = \log 18$

16) $\ln 9 + \ln (x-3) = 3$

Solve each equation. Remember to check for extraneous solutions.

17) $\sqrt{x-10} = \sqrt{3x-38}$

18) $n-5 = \sqrt{4n-23}$

19) $\sqrt{9-v} = \sqrt{2v-12}$

20) $\sqrt{-14-2v} = \sqrt{-5-v}$

Solve each equation.

21) $3^{3x} = 27$

22) $64^{-2x} = 8$

23) $27^b = \left(\frac{1}{3}\right)^{-3b-3}$

24) $36^{-2r} = 6^3$

Solve each equation. Remember to check for extraneous solutions.

25) $\frac{1}{x+4} - \frac{1}{2x^2 + 2x - 24} = \frac{3}{x^2 + x - 12}$

26) $\frac{1}{8n} = \frac{1}{2n} + \frac{1}{2}$

27) $\frac{k-4}{3k^2 + 3k} = \frac{1}{3k^2 + 3k} - \frac{1}{k}$

28) $\frac{3}{2x+8} + \frac{1}{2} = \frac{3}{x+4}$

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

29) 4, -16, 64, -256, ...

30) -2, -4, -12, -48, ...

31) -3, -18, -108, -648, ...

32) 1, 5, 25, 125, ...

Determine if the sequence is arithmetic. If it is, find the common difference, the 52nd term, and the explicit formula.

33) 29, 23, 17, 11, ...

34) 12, 5, -2, -9, ...

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State if the given angles are coterminal.

3) $\frac{53\pi}{36}, -\frac{19\pi}{36}$

Yes

4) $\frac{31\pi}{18}, \frac{67\pi}{18}$

Yes

Find the reference angle.

5) -135°

45°

6) -160°

20°

7) $-\frac{13\pi}{9}, \frac{4\pi}{9}$

8) $-\frac{7\pi}{6}, \frac{\pi}{6}$

Convert each degree measure into radians and each radian measure into degrees.

9) $420^\circ \frac{7\pi}{3}$

10) $-\frac{31\pi}{18}$

-310°

11) $240^\circ \frac{4\pi}{3}$

12) $330^\circ \frac{11\pi}{6}$

Solve each equation. Remember to check for extraneous solutions.

13) $\log_2 5 - \log_2 (x-3) = \log_2 5$

$\{4\}$

14) $\log 6 - \log 5x = \log 30 \left\{ \frac{1}{25} \right\}$

15) $\log (x-4) - \log x = \log 18$

No solution.

16) $\ln 9 + \ln (x-3) = 3 \left\{ \frac{e^3 + 27}{9} \right\}$

Solve each equation. Remember to check for extraneous solutions.

17) $\sqrt{x-10} = \sqrt{3x-38}$

$\{14\}$

18) $n-5 = \sqrt{4n-23}$

$\{8, 6\}$

19) $\sqrt{9-v} = \sqrt{2v-12}$

$\{7\}$

20) $\sqrt{-14-2v} = \sqrt{-5-v}$

$\{-9\}$

Solve each equation.

$$21) 3^{3x} = 27$$

{1}

$$22) 64^{-2x} = 8 \left\{ -\frac{1}{4} \right\}$$

$$23) 27^b = \left(\frac{1}{3}\right)^{-3b-3}$$

$$24) 36^{-2r} = 6^3 \left\{ -\frac{3}{4} \right\}$$

No solution.

Solve each equation. Remember to check for extraneous solutions.

$$25) \frac{1}{x+4} - \frac{1}{2x^2+2x-24} = \frac{3}{x^2+x-12} \left\{ \frac{13}{2} \right\}$$

$$26) \frac{1}{8n} = \frac{1}{2n} + \frac{1}{2} \left\{ -\frac{3}{4} \right\}$$

$$27) \frac{k-4}{3k^2+3k} = \frac{1}{3k^2+3k} - \frac{1}{k} \left\{ \frac{1}{2} \right\}$$

$$28) \frac{3}{2x+8} + \frac{1}{2} = \frac{3}{x+4}$$

{-1}

Determine if the sequence is geometric. If it is, find the common ratio, the 8th term, and the explicit formula.

$$29) 4, -16, 64, -256, \dots$$

Common Ratio: $r = -4$

$$a_8 = -65536$$

$$\text{Explicit: } a_n = 4 \cdot (-4)^{n-1}$$

$$30) -2, -4, -12, -48, \dots$$

Not geometric

$$31) -3, -18, -108, -648, \dots$$

Common Ratio: $r = 6$

$$a_8 = -839808$$

$$\text{Explicit: } a_n = -3 \cdot 6^{n-1}$$

$$32) 1, 5, 25, 125, \dots$$

Common Ratio: $r = 5$

$$a_8 = 78125$$

$$\text{Explicit: } a_n = 5^{n-1}$$

Determine if the sequence is arithmetic. If it is, find the common difference, the 52nd term, and the explicit formula.

$$33) 29, 23, 17, 11, \dots$$

Common Difference: $d = -6$

$$a_{52} = -277$$

$$\text{Explicit: } a_n = 35 - 6n$$

$$34) 12, 5, -2, -9, \dots$$

Common Difference: $d = -7$

$$a_{52} = -345$$

$$\text{Explicit: } a_n = 19 - 7n$$