## Convergent and Bounded Sequence- Worksheet

1. Find the bounds of the sequence 
$$a_n = 3 - \frac{1}{n}$$
.

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$$a_n = 3 - \frac{1}{n}$$
.

6. Does the sequence  $a_n = \frac{(-2)^{n-1}}{n^2}$  converge? Why?

2. Find the bounds of the sequence 
$$a_n = 3n^2 - n$$
.

7. Does the sequence 
$$a_n = \frac{an^2-2}{b^2n-n^2}$$
 converge? Why?

3. Does the sequence 
$$a_n = \frac{3}{n^2}$$
 converge? 8. Does the sequence  $a_n = (-2)^{n-1}$  converge? Why?

8. Does the sequence 
$$a_n = (-2)^{n-1}$$
 converge? Why?

4. Does the sequence 
$$a_n = \frac{n+1}{n^2}$$
 converge? 9. Does the sequence  $a_n = \frac{\cos n}{n}$  converge? Why?

9. Does the sequence 
$$a_n = \frac{\cos n}{n}$$
 converge? Why?

5. Does the sequence 
$$a_n = \left(\frac{e^n}{n}\right)^2$$
 converge? Why? 10. Does the sequence  $a_n = \frac{n}{\ln n}$  converge? Why?

10. Does the sequence 
$$a_n = \frac{n}{\ln n}$$
 converge? Why?

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