1. Find the fraction

$$\frac{p}{q}$$

that is the limit of the repeating decimal

$$5.\overline{2}$$

2. Find the fraction

$$\frac{p}{q}$$

that is the limit of the repeating decimal

$$1.0\overline{36}$$

3. Find a number in the form

$$\frac{a+\sqrt{b}}{c}$$

which is the limit of the continued fraction

$$[1,\overline{2}]$$

4. Find a number in the form

$$\frac{a+\sqrt{b}}{c}$$

which is the limit of the continued fraction

$$[\overline{1,3}]$$

5. Find the number

$$L$$

such that

$$\lim_{x \to 2} x^2 = L$$

6. Find the number

$$L$$

such that

$$\lim_{x \to 1} \frac{x^2 + 2x + 3}{x + 2} = L$$

7. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to \infty} (1 - x^2) = L$$

8. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to \infty} \frac{1}{1 - x^2} = L$$

9. Find the number

$$L$$

which is the limit of the expression

$$\sqrt{6+\sqrt{6+\sqrt{6+\cdots}}}$$

10. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to \infty} \frac{x^2 + 3x - 5}{2x^2 - 5} = L$$

11. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to -\infty} \frac{x^3 + 125}{x + 5} = L$$

12. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to 2} \frac{x^2 - 4}{x - 2} = L$$

13. Find the extended real number

$$L$$

which could be finite, ∞ or $-\infty$ such that

$$\lim_{x \to -1} \frac{1}{x^2 + 2x + 1} = L$$