

Review: Chapter 2

Evaluate.

1) $\frac{n^2 - 4n + 1}{n - 5}$ when $n = 1$

2) $\frac{b + 1}{4b - 16}$ when $b = 4$

State the excluded value(s).

3) $\frac{5k^2 + 15k}{k + 3}$

5) $\frac{b^2 + 12b + 20}{b^2 - 6b - 16}$

4) $\frac{13p}{25p^2 - 50p}$

Simplify each expression.

6) $\frac{48a}{60a^3}$

9) $\frac{2n^2 + 23n + 30}{3n + 30}$

7) $\frac{x + 5}{x^2 + 13x + 40}$

10) $\frac{3x^2 + 8x + 5}{6x^2 - 18x - 24}$

8) $\frac{k^2 - 8k + 7}{k^2 - 1}$

11) $\frac{7 - x}{2x^2 - 98}$

Multiply or divide, expressing the result in lowest terms.

12) $\frac{20x}{3x} \div \frac{10}{6}$

15) $\frac{x^2 + 7x - 30}{x - 5} \cdot \frac{x + 9}{x^2 + 6x - 27}$

13) $\frac{x - 4}{24x + 21} \div \frac{4}{24x + 21}$

16) $\frac{6v^2 - 11v - 35}{3v + 5} \div \frac{4v^2 - 49}{4v + 4}$

14) $\frac{x^2 - 11x + 18}{x + 7} \cdot \frac{x + 7}{x - 9}$

17) $\frac{4p^2 + 43p + 63}{p^2 + 18p + 77} \div \frac{2p^2 - 162}{p^2 - 2p - 63}$

Add or subtract, expressing the result in its lowest terms.

$$18) \frac{x^2}{x-3} - \frac{7x-12}{x-3}$$

$$22) \frac{t}{t-9} - \frac{1}{5t-45}$$

$$19) \frac{t^2-12t}{t-3} + \frac{2t+21}{t-3}$$

$$23) \frac{x}{x^2+6x+5} - \frac{3}{x^2+8x+7}$$

$$20) \frac{a^2+4a}{a^2+11a+24} - \frac{32}{a^2+11a+24}$$

$$24) \frac{x-1}{x-2} - \frac{-4x+6}{x^2-6x+8}$$

$$21) \frac{3x}{x^2-1} + \frac{x}{x+1}$$

$$25) \frac{x+1}{x^2+7x+10} + \frac{x+7}{x^2-25}$$

Solve.

$$26) \frac{m-6}{2} = \frac{4}{8}$$

$$29) \frac{-5}{x+3} + \frac{7}{x-12} = \frac{9}{x^2-9x-36}$$

$$27) \frac{x+1}{6} = \frac{x+8}{4}$$

$$30) \frac{1}{x-1} + \frac{x}{x-2} = \frac{4x-5}{x^2-3x+2}$$

$$28) \frac{x+4}{x} + \frac{1}{7} = \frac{1}{x}$$

$$31) \frac{-9x}{x^2-49} - \frac{10}{x-7} = \frac{1}{x+7}$$

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

32) A swimming pool can be filled by one hose in 12 hours and by another hose in 8 hours. How long will it take both hoses together to fill the pool?

33) When exchanging US Dollars (USD) for Philippine Peso (PHP) the number of Philippine Pesos received is directly proportional to the number of US Dollars to be exchanged. The exchange rate is approximately \$0.02 to 1 PHP. At this rate, how many dollars would you get if you exchanged 25,000 PHP?

ANSWERS to Review: Chapter 2

$$\textcircled{▶} 1) \frac{1}{2}$$

2) undefined

3) -3

$$\textcircled{▶} 5) -2, 8$$

4) 0, 2

6) $\frac{4}{5a^2}$

$$\textcircled{▶} 9) \frac{2n+3}{3}$$

7) $\frac{1}{x+8}$

10) $\frac{3x+5}{6(x-4)}$

8) $\frac{k-7}{k+1}$

$$\textcircled{▶} 11) -\frac{1}{2(x+7)}$$

12) 4

15) $\frac{x+10}{x-5}$

13) $\frac{x-4}{4}$

16) $\frac{4(v+1)}{2v+7}$

$$\textcircled{▶} 14) x-2$$

17) $\frac{4p+7}{2(p+11)}$

18) $x - 4$

19) $t - 7$

Ⓟ 20) $\frac{a-4}{a+3}$

21) $\frac{x(x+2)}{(x+1)(x-1)}$

22) $\frac{5t-1}{5(t-9)}$

23) $\frac{x^2+4x-15}{(x+1)(x+5)(x+7)}$

Ⓟ 24) $\frac{x+1}{x-4}$

25) $\frac{2x^2+5x+9}{(x-5)(x+2)(x+5)}$

26) $m = 7$

27) $x = -22$

Ⓟ 28) $x = -\frac{21}{8}$

29) $x = -36$

Ⓟ 30) $x = 3$

31) $x = -\frac{63}{20}$

Ⓟ 32) 4.8 hours

Ⓟ 33) \$500.00