Practice 14.3, 14.4a_b

Name_____

(14.3) Simplify and reduce to lowest terms.

1) $\dfrac{5}{21} - \dfrac{1}{21}$

2) $\dfrac{17}{10x} - \dfrac{8}{10x}$

3) $\dfrac{4}{8x^2} + \dfrac{6}{8x^2}$

4) $\dfrac{2x + 8}{x^2 + 8x + 15} - \dfrac{x + 3}{x^2 + 8x + 15}$

5) $\dfrac{5x}{x + 4} + \dfrac{7x - 8}{x + 4} - \dfrac{4x}{x + 4}$

Solve the problem.

6) The farther someone is from a light source, the less intense its light. The equation $I = \dfrac{21}{4d^2}$ approximates the light intensity from a certain light source at a distance of d meters, where I is measured in watts per square meter. Find I for d = 2 meters and interpret the result.

(14.4_a_b) Find the least common multiple.

7) t, t + 8

8) $x^2 - 36$, x + 6

9) $m^2 - 2m$, $m^2 - 5m + 6$

Rewrite the rational expression using the specified denominator D.

10) $\dfrac{4y}{y^2 - 9}$, D = (y - 3)(y + 3)(y + 11)

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Simplify.

11) $\dfrac{5}{7} - \dfrac{1}{2}$

12) $\dfrac{4}{5} - \dfrac{3}{20}$

13) $\dfrac{1}{10} + \dfrac{3}{7}$

14) $\dfrac{12}{x} + \dfrac{7}{4x}$

15) $\dfrac{5}{r} + \dfrac{7}{r - 8}$

16) $\dfrac{4}{x - 2} + \dfrac{9}{2 - x}$

17) $\dfrac{3}{y^2 - 3y + 2} + \dfrac{5}{y^2 - 1}$

18) $\dfrac{2}{15x} - \dfrac{4}{21x^2}$

1) $\dfrac{4}{21}$

2) $\dfrac{9}{10x}$

3) $\dfrac{5}{4x^2}$

4) $\dfrac{1}{x + 3}$

5) $\dfrac{8x - 8}{x + 4}$

6) $\dfrac{21}{16} = 1.3125$; the intensity is 1.3125 W/m^2 at 2 m.

7) $t(t + 8)$

8) $x^2 - 36$

9) $m(m - 2)(m - 3)$

10) $\dfrac{4y(y + 11)}{(y - 3)(y + 3)(y + 11)}$

11) $\dfrac{3}{14}$

12) $\dfrac{13}{20}$

13) $\dfrac{37}{70}$

14) $\dfrac{55}{4x}$

15) $\dfrac{12r - 40}{r(r - 8)}$

16) $\dfrac{-5}{x - 2}$

17) $\dfrac{8y - 7}{(y - 1)(y + 1)(y - 2)}$

18) $\dfrac{2(7x - 10)}{105x^2}$