



ACT COMPASS Preparation Worksheet

Algebra: Rational Expressions

Simplify each expression.

$$1. -\frac{36x^3}{42x^2} = -\frac{6x}{7}$$

$$2. -\frac{70n^2}{28n} = -\frac{5n}{2}$$

$$3. \frac{x-4}{3x^2-12x} = \frac{1}{3x}$$

$$4. \frac{27}{27x+18} = \frac{3}{3x+2}$$

$$5. \frac{b^2+3b-28}{b^2-49} = \frac{b-4}{b-7}$$

$$6. \frac{6v^3+42v^2}{2v^2+26v+84} = \frac{3v^2}{v+6}$$

$$7. \frac{x^2+2x-80}{2x^3-24x^2+64x} = \frac{x+10}{2x(x-4)}$$

$$8. \frac{59n}{99} \cdot \frac{80}{33n} = \frac{4720}{3267}$$

$$9. \frac{96}{38n} \cdot \frac{25}{45} = \frac{80}{57n}$$

$$10. \frac{2(p+6)}{4} \cdot \frac{p-3}{2(p-3)} = \frac{p+6}{4}$$

$$11. \frac{1}{v+10} \cdot \frac{10v+30}{v+3} = \frac{10}{v+10}$$

$$12. \frac{3b^2+18b}{b+6} \cdot \frac{1}{b+8} = \frac{3b}{b+8}$$

$$13. \frac{v-7}{v+6} \cdot \frac{10v+60}{v-7} = 10$$

$$14. \frac{8v-56}{8v+48} \cdot \frac{v^2+9v+18}{8v^2+24v} = \frac{v-7}{8v}$$

$$15. \frac{10n}{9} \div \frac{13n^2}{16} = \frac{160}{117n}$$

$$16. \frac{7}{18} \div \frac{6}{9a} = \frac{7a}{12}$$

$$17. \frac{7a^2}{7a^3+56a^2} \div \frac{2}{a^2+7a-8} = \frac{a-1}{2}$$

$$18. \frac{7}{8r-40} \div \frac{1}{8r-40} = 7$$

$$19. \frac{b^2-2b-15}{8b+20} \div \frac{2}{4b+10} = \frac{(b+3)(b-5)}{4}$$

$$20. \frac{6p+27}{18p^2+36p} \div \frac{16p+72}{2p+4} = \frac{1}{24p}$$

$$21. \frac{u+5v}{8v^2u^2} - \frac{u-6v}{8v^2u^2} = \frac{11}{8vu^2}$$

$$22. \frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a} = \frac{5a-6}{6a^2+30a}$$

$$23. \frac{7x}{2x} - \frac{x-2}{20x+16} = \frac{69x+58}{4(5x+4)}$$

$$24. \frac{7}{3n^2+24n} - \frac{7}{2n} = \frac{-154-21n}{6n(n+8)}$$

$$25. \frac{4x}{x^2+4x-5} - \frac{5}{4} = \frac{-4x-5x^2+25}{4(x+5)(x-1)}$$

$$26. \frac{6}{x-2} + \frac{6}{x+1} = \frac{12x-6}{(x+1)(x-2)}$$